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The Bulletin of Zoological Nomenclature

The Official Periodical of the
International Commission
on Zoological Nomenclature



ICZN

THE BULLETIN OF ZOOLOGICAL NOMENCLATURE

The *Bulletin* is published four times a year for the International Commission on Zoological Nomenclature by the International Trust for Zoological Nomenclature, a registered charity (no. 211944) based in the U.K. The annual subscription for 2010 is £180 or US\$340 or €280, postage included; individual subscribers for personal use are offered a subscription of £90 or US\$170 or €140. All manuscripts, letters and orders should be sent to:

The Executive Secretary
International Commission on Zoological Nomenclature
Natural History Museum
Cromwell Road

London, SW7 5BD, U.K. (Tel. +44 207 942 5653; e-mail: iczn@nhm.ac.uk)

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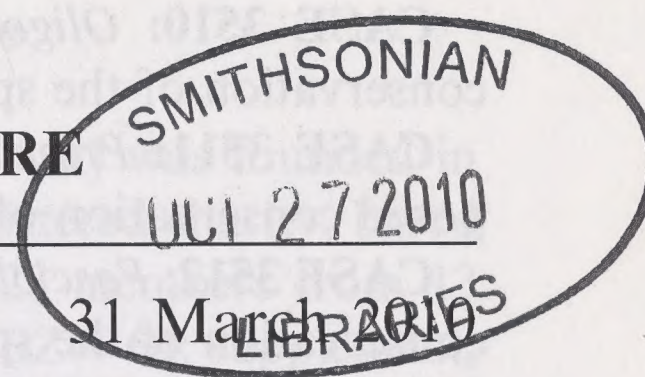
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Cover image: *Cyanea annasethe* (Haeckel, 1879), a scyphomedusa illustrated by Ernst Haeckel in *Kunstformen der Nature*, plate 8, fig. 1 as "*Desmonema Annasethe*" (an enhanced image of "*Desmonema Annasethe*" previously figured by the same author in *Das System der Medusen*, plate XXX, fig. 1).

BULLETIN OF ZOOLOGICAL NOMENCLATURE

Volume 67, part 1 (pp. 1–118)

**Notices**

(1) Applications and correspondence relating to applications to the Commission should be sent to the Executive Secretary at the address given on the inside of the front cover and on the Commission website. English is the official language of the *Bulletin*. Please take careful note of instructions to authors (present in a one or two page form in each volume and available online at <http://www.iczn.org/guidelines.html>) as incorrectly formatted applications will be returned to authors for revision. The Commission's Secretariat will answer general nomenclatural (as opposed to purely taxonomic) enquiries and assist with the formulation of applications and, as far as it can, check the main nomenclatural references in applications. Correspondence should be sent by e-mail to 'iczn@nhm.ac.uk' where possible.

(2) The Commission votes on applications eight months after they have been published, although this period is normally extended to enable comments to be submitted. Comments for publication relating to applications (either in support or against, or offering alternative solutions) should be submitted as soon as possible. Comments may be edited (see instructions for submission of comments at http://www.iczn.org/Instructions_for_comments.html).

(3) Requests for help and advice on the Code can be made direct to the Commission and other interested parties via the Internet. Membership of the Commission's Discussion List is free of charge. You can subscribe and find out more about the list at <http://list.afriherp.org/mailman/listinfo/iczn-list>.

(4) The Commission also welcomes the submission of general-interest articles on nomenclatural themes or nomenclatural notes on particular issues. These may deal with taxonomy, but should be mainly nomenclatural in content. Articles and notes should be sent to the Executive Secretary.

New applications to the Commission

The following new applications have been received since the last issue of the *Bulletin* (volume 66, part 4, 18 December 2009) went to press. Under Article 82 of the Code, the existing usage of names in the applications is to be maintained until the Commission's rulings on the applications (the Opinions) have been published.

CASE 3508: *Maculinea* Van Eecke, 1915 (Lepidoptera, LYCAENIDAE): proposed conservation over *Phengaris* Doherty, 1891. E. Balletto, S. Bonelli, J. Settele, J.A. Thomas, R. Verovnik & N. Wahlberg.

CASE 3509: *Cetonia squamosa* Gory & Percheron, 1842 (currently *Aethiessa squamosa*) (Insecta, Coleoptera): proposed conservation of the specific name. I. Sparacio.

CASE 3510: *Oligosoma ornatum* (Gray, 1843) (Reptilia, Squamata): proposed conservation of the specific name. G.B. Patterson.

CASE 3511: *Prionocerus bicolor* Redtenbacher, 1868 (Insecta, Coleoptera): proposed conservation of the specific name. M. Geiser.

CASE 3512: *Fasciolaria granosa* Broderip, 1832 (Mollusca: Gastropoda): proposed conservation of the specific name. M.A. Snyder, W.G. Lyons & G.J. Vermeij.

CASE 3513: *Chaetosoma* Westwood, 1851, *Apodasya* Pascoe, 1863, *Apodasya pilosa* Pascoe, 1863 and CHAETOSOMATIDAE Crowson, 1952 (Insecta, Coleoptera): proposed conservation. Y. Bousquet & P. Bouchard.

CASE 3514: Proposed removal of homonymy between the family-group names ENHYDRINI Gray, 1825 and ENHYDRINI Régimbart, 1882. H. Özdikmen & M.C. Darilmaz.

CASE 3515: *Rhynchotherium* Falconer, 1868 (Mammalia, Proboscidea): proposed conservation of usage by designation of *Rhynchotherium falconeri* Osborn, 1923 as the type species. S.G. Lucas.

CASE 3516: *Scapsipedus micado* Saussure, 1877 (currently *Velarifictorus micado*; Orthoptera, GRYLLIDAE): proposed conservation of usage of the specific name by the designation of a neotype. S.W. Heads & A. Ichikawa.

CASE 3517: LATRIDIIDAE Erichson, 1842 (Insecta, Coleoptera): proposed precedence over CORTICARIIDAE Curtis, 1829; and *Corticaria* Marsham, 1802: proposed conservation of usage by designation of *Corticaria ferruginea* Marsham, 1802 as the type species. Y. Bousquet, P. Bouchard & N.P. Lord.

CASE 3518: *Cornu* Born, 1778 (Mollusca, Gastropoda, Pulmonata, HELICIDAE): proposed validation of the generic name. R.H. Cowie.

CASE 3519: *Eumolpus* Weber, 1801, *Chrysochus* Chevrolat in Dejean, 1836 and *Bromius* Chevrolat in Dejean, 1836 (Insecta, Coleoptera, CHRYSOMELIDAE, EUMOLPINAE): proposed conservation of usage. A.G. Moseyko, E. Sprecher-Uebersax & I. Löbl.

Solene Morris – ICZN Secretariat, BZN Zoologist

Solene Morris (1944–2010) was a part of the team at the ICZN Secretariat when she was diagnosed with cancer in 2008. In her time at the ICZN she prepared many Cases for the BZN and worked with three consecutive Executive Secretaries, Philip Tubbs, Andrew Wakeham-Dawson and Andrew Polaszek.

Solene studied biology, geology and medicine at the University of Connecticut, U.S.A. She did fieldwork on glacial sedimentation on the coast of New England, and worked as a research assistant to Prof. Karl Waage of Yale University on Late Cretaceous faunas from the Dakotas. She moved to the UK in 1971 where she curated coelenterates and then molluscs, with an emphasis on bivalves, in the Zoology Department of the Natural History Museum, London (NHM). In 1989 she was seconded to the Royal College of Surgeons to look after Down House, the historic home of Charles Darwin, and to curate the collections there until 1996.

She is survived by her husband Noel and daughter Nichola who both work in the department of Palaeontology at the NHM.

She made substantial contributions to the work of the ICZN and her enthusiasm for nomenclature, taxonomy and museum sciences will be greatly missed.

The International Trust For Zoological Nomenclature

The International Trust For Zoological Nomenclature (the Trust) was founded in 1947 to manage the Commission's financial matters. It is a registered charity, based in the U.K. (No. 211944). At present, the Trust consists of 28 members from 13 countries. Discussion of the Trust's activities can be found in BZN **60**: supplement, pp. 1–12 (March 2003).

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Contributions to the Discussion on Electronic Publication IV

Introduction

This is the fourth instalment of comments on the ICZN proposed amendment on electronic-only publication, which would allow publication of nomenclatural acts on exclusively electronic media to be valid and available. The proposed amendment is available in the BZN 65: 265–275, several other sources, and online at http://www.iczn.org/electronic_publication.html. We have sought input from all stakeholders in this process, including taxonomists, publishers, archivists, database experts and the wide range of users of nomenclatural information. The IUBS has approved the principles underlying the proposed amendment.

As you will see from the following contributions, some new perspectives continue to be raised and new information is coming to light that may affect the acceptability of this proposed amendment to the community. The date for the Commission's vote has not yet been set. We will initiate a new method for making Comments available online on the ICZN website in advance of the print copy of the BZN, thus we will welcome further contributions on this topic in the near future. We also encourage continued debate through listservers (e.g. ICZN listserver (<http://list.afriherp.org/mailman/listinfo/iczn-list>) and Taxacom (<http://mailman.nhm.ku.edu/mailman/listinfo/taxacom>)) and the various journals that have published the proposed amendment.

Ellinor Michel

Svetlana Nikolaeva

Natalie Dale-Skey

Steve Tracey

(1) Alfred L. Gardner

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Although I am against electronic publishing of nomenclatural work, I realise that such a change is inevitable. As you may know, *Mammalian Species* is electronically published except for a limited number of hard copies distributed to a select number of institutions worldwide. Unfortunately, these hard copies are distributed once per year as a set for that year, yet each copy bears the date when it was supposedly available. Although I have argued that these *Mammalian Species* accounts often contain nomenclatural acts (such as when a unique name combination is used), which is unavoidable because of their synthetic nature, my arguments have been ignored. According to the current Code, the date for these nomenclatural acts must be cited as the last day of the year the printed version is made available.

Nevertheless, to 'borrow' from the *Mammalian Species* example, electronic publishing of nomenclatural work might be acceptable if the journal or other organ

publishing such research were to provide free electronic copies in PDF format of these individual works/publications to a select number of museums and other institutions throughout the world at the time the report was made available electronically. Those museums and other institutions would each have to agree to place that 'publication' on their institutional website, and provide access to the scientific community free of charge.

(2) Paul Callomon

Malacology Department, Academy of Natural Sciences, 1900 Benjamin Franklin Parkway, Philadelphia, PA 19103-1101, U.S.A. (e-mail: callomon@ansp.org)

Further to my comments at the recent AMS meeting in Ithaca, I am against the Code permitting electronic-only publication. This is because:

(a) With the number and kind of forums for broadcasting content increasing daily, I do not believe that this is a sensible time to be changing the rules. The requirement that a work be printed is neither onerous nor unreasonable now that printing can be done locally and cheaply, though it should be a stipulation that to be available papers should at least appear in a journal with a verifiable ISSN number. This does not preclude desk-top printing, it just means that you have to register your journal.

(b) From my long experience with 'grey' journals in Malacology, I do not believe that even a good majority of those publishing electronically would archive their work in the prescribed fashion, or at least do it within a reasonable time frame. This would leave a froth of works in cyberspace that may or may not be available, or available from an indeterminate date, with the onus being on the reader to establish their status. I can't see how that would help us at all.

(c) The transition of a work from an electronic or typed manuscript to a printed copy is an act that is very difficult to perform without creating some kind of record independent of the work itself. This transformation from one physical state to another has proven invaluable time and again in establishing the date of publication of a work decades (and often centuries) after everyone involved in its creation perished.

An example: it was long known that several versions of Tadashige Habe's (1961) book *Colored Illustrations of the Shells of Japan II* existed. In the late 1990s, Dick Petit and I managed, with some effort, to assemble 19 of the 21 known printings. By comparing them page by page we were able to establish that the author's practice of communicating changes direct to the printers each time they reprinted it meant that this book had seven versions. Along the way, Habe introduced new names, all of them in years subsequent to 1961. The title page retained that date almost to the end, however, and the only way to determine when certain names were introduced was to refer to the printers' marks on a copy of the version in which they first appeared. The physical existence of these books made this possible, even after 45 years, and we were able to publish a full collation of the work (as *Venus supplement*, no. 3) that gave the correct dates for all the new taxa. In some cases, this had a bearing on synonymy, which made it an even more useful exercise.

The main objection to conventional journal publication is that it takes too long. Editors wait until they have enough manuscripts for an issue, and a delay in the

review of one holds them all up. The *Zootaxa* model effectively dealt with this problem, and I'm all in favor of every scientific journal adopting that model. Nevertheless, *Zootaxa* does lodge a printed version in a number of libraries, and this has yet to even slightly slow down the headlong pace of its growth. In summary: Let's not do something just because we can. Let's do only what we should, and change only what we must.

(3) Mario Elgueta

Entomología, Museo Nacional de Historia Natural, Casilla 787, Santiago (21), Chile (e-mail: melgueta@mnhn.cl)

I consider that paper publication will always be preserved and, it is true, each day taxonomists around the world are working with copies of books and journals 200–300 years old. On the other hand, I think the preservation of electronic information is not assured and many experts actually consider it to be a serious problem.

I know that today rapid publication of papers may be necessary, often as a consequence of administrative pressure on researchers based on institutional and/or national policies. Many online journals offer alternatives to this problem.

On a practical level I do not have a negative opinion of electronic versions but I consider it fundamental that we assure the continuity of printed versions of journals. I think the combined publication options (online plus printed) is both possible and a satisfactory solution.

(4) Hans Malicky

Sonnengasse 13, A -3293 Lunz am See, Austria

According to Article 8 of the present Code, a publication must fulfil the following conditions:

8.1.1. it must be issued for the purpose of providing a public and permanent scientific record, and

8.1.3. it must have been in an edition containing simultaneously obtainable copies by a method that assures numerous identical and durable copies.

Publication on the internet cannot fulfil these conditions for the following reasons.

1. Documents on the internet may be changed or replaced at any time, so the permanent scientific record of the original version is not necessarily available. Promises not to change such a document are not credible as there is no way that anyone outside can prevent this.

2. Documents on the internet are only available as long as someone pays for the presentation. If the person or institution ceases payment (e.g. following bankruptcy), the document disappears and is lost. Promises to prevent this happening are not credible. For this reason a permanent scientific record and durable copies are not available.

3. It is well known that the internet is subject to tampering by the military, by dictatorships and by illegal hackers. For this reason too, a permanent scientific record and durable copies are not available.

The conclusion is that publication of documents for the purposes of zoological nomenclature on the internet must not be permitted. Taxonomic work is hard enough and we do not want more difficulties. Remember the controversial decision in the last edition of the Code to accept publication on CD (Article 8.6) which apparently will now be cancelled.

It is certainly useful to publish an internet version in addition to the printed one but the printed version must remain the reference version, and must decide the date of publication. A reasonable number of printed copies (I suggest 100 instead of the 25 proposed in recommendation 8B) must be produced and distributed. With today's printing techniques it is no problem to print copies and to put the document onto the internet simultaneously. So I am asking the Commission not to allow electronic-only publication of such documents on the internet. Instead, the proposed 'Recommendation 8C. *Ideally names and nomenclatural acts published in electronic works should also be published simultaneously on paper*' should be declared as an obligatory regulation, i.e. 'Names and nomenclatural acts published in electronic works must also be published simultaneously on paper.'

I have discussed this point in the last few months with many colleagues from a number of countries. Most are strongly in favour of obligatory publication on paper. There is no objection to a simultaneous publication on the internet if the deciding version is on paper. If however the Commission votes to permit electronic-only publication, I foresee the following: some colleagues will try to read both paper and internet versions but will not be happy about the additional trouble and loss of time. Some colleagues will reject and ignore electronic-only publications, while others will only accept electronic publications.

I leave it to your imagination what this would mean for the future. We might expect an increasingly divergent nomenclature and the end of stability.

Proposed Article 8.4.1

'Copies must be printed on paper using ink or toner.' The English word 'ink' translates to four different meanings in German: 'Tinte', 'Tusche', 'Druckfarbe' or 'Druckerschwärze'. The correct meaning in this case is 'Druckerschwärze'. It would be useful to express that more clearly.

Proposed Recommendation 8A

This section lists 'appropriate scientific journals' or 'well-known monographic series', but what about separate books?

Proposed Article 9

'What does not constitute published work . . .' In the 3rd edition of the Code (1985) hectographing is not forbidden but only declared an 'undesirable process' (Recommendation 8A). In the 4th edition (1999) this process is not mentioned. Therefore, nomenclatural acts in hectographed publications after 1985 are available. It would be quite unacceptable if they were now made retrospectively unavailable 25 years later. A number of generic and specific names which have been in general use until now would then become invalid, which contradicts any fundamental law. This sentence should therefore be inserted: '9.2. *after 2009, works produced by hectographing or mimeographing*'.

(5) Adam Farquhar

Head of Digital Library Technology, The British Library, Wetherby, West Yorkshire LS23 7BQ, U.K. (e-mail: Adam.Farquhar@bl.uk)

Scholarly communication has clearly entered the digital age. Researchers, however, have a strong focus on the here and now – on accessing and exchanging current results, new observations, and new theories. This focus is, to some degree, at odds with the goals of organisations such as the International Commission on Zoological Nomenclature (ICZN). Such organisations and the communities that they represent take the long view. The names that we give to things are lasting and the ICZN needs to ensure that the basis for these names lasts as long as the names themselves – hundreds or thousands of years.

Over the last few years, the ICZN has been evaluating the proposal to extend the definition of valid publication in the Code of zoological nomenclature to include digital publication of new scientific names and other nomenclatural acts. There are two underlying challenges that any proposal has to meet. Will the bits be accessible? In the field of digital technology this is referred to as the bit-level preservation challenge. It includes the need to ensure that the digital record has not been tampered with. Will researchers be able to make sense of them? This is referred to as the content-level preservation challenge.

Fortunately, these challenges are not unique to zoological nomenclature. Addressing them is an active area for organisations that have a responsibility to preserve our scientific and cultural heritage. National libraries and archives have been leading many of the efforts in this area, sometimes with strong and effective support from bodies such as the European Commission and national governments.

Since 2004, I have been involved in designing and implementing the British Library's response to the challenge of ensuring long-term access to digital material, as well as leading the PLANETS project (Preservation and Long-term Access through Networked Services, www.planets-project.eu/about/), a major digital preservation initiative co-funded by the European Union. In this comment, I draw from my experience to highlight some of the recent progress relevant to the questions facing the ICZN in consideration of accepting validity from e-only publication.

The first challenge is to ensure that the bits are there. For paper documents, this is relatively easy to ensure. If paper is stored in a cool dry environment, it can easily last a hundred years or more. It lends itself to passive preservation approaches.

Digital media are different. There are two reasons for this. First, we are only at the beginning of the digital age and are still in a period of rapid innovation. There will be major changes in the approaches that we use to storing digital information in the coming years. I expect these changes to be as great as the ones we saw moving from stone to clay tablets or from vellum to printed paper. Second, the digital media that we happen to have stumbled upon also happen to be short-lived. In part, this is because the design pressures have emphasised speed and density, not longevity. Because of this, digital media require an active preservation approach.

At the British Library we actively manage our storage media. We regularly refresh disks and tapes, copying the digital collections from one generation of storage devices to the next. This enables us to take advantage of rapid advances in storage

technology as it becomes faster, denser, and more energy efficient. Our overall systems are designed to be heterogeneous so that we can mix different generations of technology together at any time.

Just like paper, digital media are subject to all sorts of disasters. The buildings that they are stored in can be damaged by fire, flood, or earthquake. We address this by holding multiple copies of every digital object in our collection. They are distributed geographically, with copies in London, Yorkshire and Wales. An additional location is planned for Scotland. Digital media can also fail, resulting in damage to individual digital objects. We address this by monitoring every object on a regular (currently monthly) basis to ensure that the bits have not been damaged. This level of checking is impossible on a paper collection, due to the cost of manual examination. If we find a single bit out of place, we are able to retrieve a copy from one of the other locations. Unlike paper documents, the digital copies are bit-for-bit perfect. This approach – distributed sites, active refresh, bit-level monitoring and repair gives us a high level of confidence that we will not lose the bits over a very long time.

Ensuring that no one can tamper with the record requires some additional steps. The British Library creates a time-stamped digital signature of every object that it stores in its digital library. This enable us to guarantee not only that an object is exactly what it was when we received it, but also the time at which we received it. The approach has a sound mathematical basis and the implementation satisfies the rigorous FIPS 140 Level 2 standard for cryptographic modules. This ensures that we can detect any tampering such as someone inserting or modifying an object. In addition, we follow best practices for physical security and independent management of the different sites. This approach gives us a high level of confidence that the bits will not be modified or tampered with.

Overall, the state-of-the-art around bit-level preservation is mature. Best practice organisations, such as the British Library, the National Archives of the U.K., the National Archives and Royal Library of the Netherlands, the Austrian National Library, the Swiss Federal Archives and the Danish Royal Library, to name some of the leaders in this area, have considerable experience ensuring long-term bit-level preservation.

The second challenge is to ensure that we can make sense of the bits. For paper documents, this is relatively easy to ensure. We can directly perceive the drawings, images and words that are on the pages. Of course, there can be real problems making sense of the words without understanding the language, jargon, and background knowledge that the authors assumed. Digital objects are different. They are represented using specific file formats that rely on software and hardware to render them. Again, the rate of innovation makes this challenge more acute. The design pressures have not been on developing long-lived digital objects, but on providing new capabilities and features. A digital document from 1980 was typically designed to be printed and read from start to finish. Nonetheless, the file formats could be very complex. A twenty year old digital document may be very challenging to read or print using today's software. Furthermore, while digital documents today are often designed for printing, they are likely to have embedded components such as images, audio, video, or data; internal and external links; and dynamic interactive components. This complexity makes the problem worse.

The choice of specifying the type of carrier, CD or DVD, in the current edition of the Code on Methods is an interesting one. It highlights the bit-level versus content-level preservation issue. Optical media in this class are subject to more rapid degradation than originally thought – that is the bits are likely to be lost. Specifying the medium, however, places no constraint on the content! Perhaps the content is encrypted, incorrectly written, or in a format that no-one but the author can understand.

Fortunately, there has been considerable attention lavished on overcoming the content preservation challenge. This has resulted in substantial progress in improving our understanding, developing tools, and providing services that enable us to (1) provide access to older digital content and (2) increase our confidence that we will be able to access today's digital content well into the future. Techniques that were viewed as experimental a few years ago, such as providing emulation environments for obsolete hardware platforms, are now quite practical. Other techniques, such as migrating content to new formats, are now rather well understood and part of the day-to-day work of best-practice organisations.

Before concluding, I would like to raise an issue about the Open Archival Information System Standard (OAIS) referenced in the proposed amendment. The OAIS standard provides a valuable shared vocabulary and useful guidance for anyone architecting an archival system. Compliance, however, does not provide any guarantee of the quality or trustworthiness of an archival service. There have been several subsequent activities (e.g. TRAK, Drambora, DINI) that have taken steps in this direction.

The community engaged in zoological nomenclature has a long tradition of stewardship and some unique requirements for both print and digital material that support naming acts. Fortunately, many of the concerns that they have expressed about the resilience and durability of the digital record are shared by others. National libraries and archives with support from many sides have been actively working on ensuring this durability. As the value of digital material escalates, it becomes impossible for this wider community not to find and integrate robust solutions.

The question for the zoological nomenclature community is when to fully accept digital material as supportive of naming acts and what special requirements, if any, does it need to articulate. My recommendation is (1) to accept digital material now, but with the stated preference for printed material; (2) to exploit existing processes and infrastructure, such as the U.K.'s electronic legal deposit infrastructure that deeply intertwined with the mission of long-lived organisations; (3) do not over-specify acceptable formats, but establish a light process for managing the set of acceptable formats; and (4) have some confidence that society as a whole will find satisfactory solutions to ensure that digital material is accessible and durable.

(6) Alain Dubois

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Registration as a fourth floor of the nomenclatural process

Introduction

Since the establishment of the Code (first as the 'Règles'), in order to become available, a 'scientific name' or nomen (Dubois, 2000) or a nomenclatural act had to be published in a permanent document produced as a series of identical copies such as a printed book or a paper in a periodical. However, the Commission has recently announced its intention to change this rule by making possible the introduction of an available name or act in a document published online, i.e. a virtual electronic document. This is planned to be coupled with the establishment of an Official Register of Zoological Nomenclature (Zoobank), where all names and nomenclatural acts are supposed to be ultimately registered. This proposal is a dramatic one, certainly the most important one ever suggested for the Code since its implementation. This proposed change raises numerous problems, some of which have already been discussed in this Bulletin, others elsewhere (Dubois, 2007c, 2008a, c; Carlos & Voisin, 2009), others through the web, in particular in online forums, and others only personally among colleagues during informal discussions in various countries. These problems are of various kinds, including technical ones such as the fact that electronic publication, communication and archiving are 'technique-dependent', which questions their long-term permanency and accessibility, both in times of peace and war, and philosophical, ethical and societal ones including their dependence on private profit-making companies, which questions their long-term financial sustainability and scientific autonomy, the control of their contents, or their worldwide permanent accessibility. To this can be added the highly questionable proposal to give a 'blank cheque' to the Commission for deciding on the new methods of production, distribution, formatting or archiving that will be considered Code-compliant (Article 8.6). Several of these questions were aptly presented in this Bulletin by Welter-Schultes et al. (BZN 66: 215–219). An important point which has apparently escaped the attention of many contributors to this discussion is the current 'poor understanding of nomenclature (professionals included)' (Löbl, BZN 66: 307–308) which is the result both of the absence of academic teaching of this discipline in most countries and of the low competence in this domain of many editors of periodicals and books (Dubois, 2003). Most users of the Internet and of online databases do not master nomenclatural rules at all, and it can be predicted with certainty that, if online publication of new names is authorised, they will not differentiate between names published and registered online through authorised media and those published through others not recognised by the Code, so that nomenclatural chaos is bound to develop, at least on the Web. This is exemplified by the current (December 2009) co-existence in the different language versions of Wikipedia of at least nine pages devoted to the famous Galapagos pink iguana recently described, including six where it is incorrectly designated as '*Conolophus rosada*', an unavailable name, and three

where it is correctly named *Conolophus marthae*, the available name of this species. Many other examples of invalid zoological nomenclature on the web are easy to find.

The purpose here is not to come back to all these problems in detail, but to propose a new solution in this complex discussion. Two distinct questions are at stake here, that will be considered separately: (1) the possibility of making a name or act available through electronic publication, without paper publication, and (2) the registration of names and acts in Zoobank.

Allowing nomenclatural availability though electronic publication

As shown recently in detail for some rules of the Code concerning the spellings of names (Dubois, 2010a), the Code is a very complex and fragile construction, being the result of a centenarian 'trial and error' process. It is not a 'beanbag nomenclatural system' in which isolated rules would be independent from each other and could be changed without consequences to other rules and to the overall functioning of the system. This is why changes should be brought to the Code only with great care. In particular, a sufficient period of critical study of the consequences of the proposed changes should be respected, allowing all interested zootaxonomists worldwide to have enough time to examine them in detail, not only in an abstract way, but also concretely, for example through a critical and long-term experience of the functioning of the Zoobank site. This site is currently too incomplete and contains too many mistakes to be able to play the role, potentially very useful indeed for all taxonomists, that it is supposed to play. Will the Commission prove able in the long run to keep this site functioning and to obtain the funds allowing registration in this database of the millions of zoological names already available, with accurate information on their status? As a matter of fact, this work cannot be expected of individual zootaxonomists, as they have another important priority, namely to make haste in the discovery, collection, description and naming of the myriads of animal species that are currently becoming extinct on our planet (Dubois, 2003). Ten years at least would seem to be the minimum required for such a testing period. Let us just await 2020 and see what has been the fate of Zoobank then. This is a very short period compared to the 250 years during which paper publications have been in use in zootaxonomy, through countless wars, social crises and natural catastrophes worldwide. This period should be used to organise open discussions about these proposed changes among all interested taxonomists in the world, in particular in national societies and congresses, that more people are likely to attend than international congresses, which mostly zoologists from North America and Europe have the financial ability to attend. Considering that most of the yet-to-be-described species of the planet are in the tropical areas of the world, zootaxonomists of these regions should be closely associated with the discussion of these proposed changes. This has not been the case until now if we consider the contributors of the texts published in this Bulletin or on the Zoobank online forum (see Dubois, 2008a,c). The participation in these discussions does not reflect the current situation of zootaxonomy worldwide, as can be illustrated by recent data concerning the papers published in *Zootaxa*, the most productive journal in zootaxonomy ever (Zhang, 2006). From 2001 to 2009, among 6512 authors for which the *Zootaxa* website provides data, 1856 (28.5 %) were working in Europe and 1174 (18.0 %) in North America, i.e. a total of 3030 (46.5 %

of the total). The other two most productive regions were South and Central America, with 1747 authors (26.8 %) and East Asia, with 1068 authors (16.4 %), i.e. a total of 2815 authors (43.2 % of the total). In contrast, the current Commission counts 11 members (39.3 %) from Europe and 7 (25.0 %) from North America, i.e. a total of 18 members (64.3 % of the Commission), for 1 (3.6 %) from South America and 5 (17.9 %) from East Asia, i.e. 6 members (21.4 % of the Commission). The U.S.A., which provided 1057 *Zootaxa* authors (16.2 %) are represented in the Commission by 7 members (25.0 %) but China, with 544 authors (8.4 %) has only one Commissioner (3.6 %) and Brazil, with 997 authors (15.3 %) has no member in the Commission. Although these data are only indicative as they bear on a single journal during 9 years, they strongly suggest that the Commission is not representative of the current international community of zootaxonomists.

Any final decision regarding the implementation of such a major change of the Code should not be taken by a small group of persons such as the Commission, but collectively, democratically, through a vote during an international congress convoked especially for this purpose, for example in Brazil or China, and supported by funds allowing all interested zoologists worldwide to attend, 'as the Code is the collective property of all zootaxonomists who agree to follow its Rules' (Dubois, 2008a p. 17). Doing differently might lead some zootaxonomists to stop following the Code and, for example, to join some of the alternative nomenclatural systems that have flourished in recent years, clearly as a result of problems in the Code (Laurin, 2007; Dubois, 2008c), or to adopt a local, nation-centered or language-centered nomenclature for animals, which would be catastrophic for the unity and good functioning of biological sciences.

In the meantime, the rules of availability of names and nomenclatural acts should not be modified. As well argued by Welter-Schultes et al. and Löbl, among others, availability should remain attached to paper publication, and I endorse Welter-Schultes et al.'s figure of 100 originally printed copies. These authors further suggested that 30 of these paper copies should be deposited in major libraries identified in the publication. I would rather suggest a number of 40 libraries, with an additional qualification, namely that they should be distributed worldwide, with 5 copies in each of the 8 following major regions: Africa, Central and South America, North America, Eastern and Southern Asia, Western Asia, Europe, Oceania and Sunda region. These 40 copies should be sent free to these libraries by the publishers. Brian Taylor wrote about the figure of 30 libraries: 'I cannot envisage there being more than perhaps 20 major libraries that would or could conserve paper copies for posterity'. Well, posterity may be a rather long period, indeed ... but probably several hundred libraries in Europe alone, have so far been able to conserve the early books and periodicals of human culture, including zoology, for 250 years already. We can expect that they will do the same for the next 250 years if no social, political or ecological catastrophe destroys our civilisation. Of course, such predictions are gratuitous as nobody knows what the future will be, but this is an additional reason to be prudent regarding electronic databases and communication networks. This is not a question of optimism or pessimism but of implementing the 'principle of precaution', according to which, in the absence of a scientific consensus, that no harm would ensue, the burden of proof would fall on those who advocate taking an action, and in the meantime the action should be postponed.

Paper publication has shown to be an effective way of disseminating and preserving information over centuries. In particular, it has gone through two terrible World Wars and many other regional conflicts, which destroyed millions of humans but also many human creations including cultural ones. Electronic communication and archiving still have to demonstrate that they have the ability to do so. Some supporters of the Commission's project have an optimistic approach to this problem: 'it is unconceivable that investments in electronic databases such as those for genome sequences or astronomical data will be allowed to disappear' (Knapp et al., 2007, p. 262). Well, this may be inconceivable, but it could occur – and it did indeed occur, as in the cases of NASA's moon-mission files or of the Voyager spacecraft missions cited by Welter-Schultes et al., and others that I mentioned at the 2007 Linnean Society meeting (see Discussion below). Everybody worldwide hopes that there will be no more major international or national wars, but wars still exist on this planet, and it is not inconceivable that major ones will burst out again, especially in view of the climatic, ecological and economic catastrophes that may be ahead of us. We know that paper databases have survived major conflicts but we have no way of knowing if electronic networks and archives would be able to overcome massive electronic or magnetic attacks, which can occur even in warless times, e.g. as a result of terrorism. The internet is a good tool for a healthy society in times of peace, but we should remember that it started as a military initiative. If conditions require it, it is likely that the military world will have the power to again take control of it and may decide to stop it, at least for some time or in some places.

Even in times of peace, it is likely that the internet will be more and more vulnerable to various kinds of problems or attacks. Let us just mention in passing the daily problems with the internet and electronic databases that everyone has experienced, including loss of data because of human errors, local mechanical and electric breakdowns, saturation of disks, ill-intentioned Web users, viruses and worms, etc. More worrying are the massive electronic power outages which are more and more frequent and concern more and more customers: 90 million in Brazil in 1999, 55 million in the U.S.A and Canada in 2003, 56 million in Italy in 2003, 100 million in Indonesia in 2005, 60 million in Brazil and Paraguay in 2009, not to mention hundreds of others of smaller magnitude. Governmental internet cuts can occur in some countries at some periods. Cyber attacks are becoming more frequent against individuals, companies or states and will probably become more efficacious in the coming decades. Terrorist actions or acts of war using electro-magnetic pulses (E-bombs) may disable the whole electronic network of a city or a country.

All these potential problems are unlikely, and all have technical solutions, but this is a matter of choice. These technical solutions are very costly, especially if a high level of security is sought. Military, governmental or financial infrastructures may have the means to make such major investments to protect their electronic databases but is this the case for the taxonomic community? And, even if the Commission were able to raise the high amounts of money required, the question would be would Zoobank be the best investment for such funds in the service of taxonomy in the century of extinctions? No doubt 'collecting new species in the field will remain the rate-limiting step' for the inventory of biodiversity (May, 2004), so that this should be the priority and urgency for our discipline in this century (Dubois, 2003). Above all, this requires the creation of professional positions for taxonomists,

supporting field work and museums for the safe storage of specimens, tissues and information.

Anyone who has practiced mountaineering knows that one should never drop one hand before the other is secure. The permanency of nomenclatural information is too important for communication in biology and society as a whole to abandon paper publications. It is extremely useful that these can now be duplicated and distributed worldwide by online access to documents and databases, but they should not be replaced by them. The present situation, with two parallel worlds, should be maintained as such for several decades at least before deciding a possible shift to an all-electronic communication and archiving world, if it has shown its mettle.

Before considering any possible change in the basic rules of the Code concerning availability, a very strong case should be made, documenting over a long period the reliability, permanency, accessibility and financial health of electronic publications. Of course, the fact that nomenclatural availability is linked to paper publications does not impede in the least the spreading of the same works as PDFs or through other systems by electronic means, but these should not interfere with the very special process of nomenclatural availability.

This process of availability is distinct and independent from that of nomenclatural registration. As well argued by the supporters of the Zoobank project, this database, whenever complete and reliable, will be a very useful tool for all zootaxonomists and biologists worldwide. In order for it to be complete, all names and nomenclatural acts should ultimately be registered there, which explains the temptation once cherished by some members of the Commission to make it mandatory. How can registration, a new nomenclatural process, be combined with the other rules of the Code? For the coming decade, I suggest an alternative answer to that proposed by the Commission. This could be implemented without delay in the Code, without causing any problem or disruption in the functioning of the rules. After ten years, it will be possible to evaluate whether this change was sufficient to address all the problems which the new rules proposed by the Commission are supposed to solve, without creating any additional problems, or if the proposal of the Commission still has to be considered for implementation.

The three-floor structure of the Code

Although this is not yet mentioned in the Code, the nomenclatural status of any name according to the rules is established through a process that goes through three subsequent stages or levels, the so-called 'floors' or 'storeys' of the 'nomenclatural house' (Dubois, 2005a–c): availability, allocation and validity. This means that before being potentially the valid name for a taxon, any name must first have been made nomenclaturally available, and second allocated to one or several taxa.

The Code has been functioning according to this system since its creation, but, because this structure in three floors has never been identified clearly in the Code, confusions have regularly been made regarding the proper use of the rules, e.g. between availability and validity of names, or between objective ostensional allocation of names to taxa through onomatophores ('name-bearing types') and subjective allocation of names to taxa through intentional or extensional 'definitions of names' (Dubois, 2008d). Examples of such confusions were analysed elsewhere (Dubois &

Ohler, 2000; Dubois, 2006, 2007b). The fact that such gross mistakes can appear in well-known and highly-ranked periodicals, or in famous and often-quoted books or online databases, highlights the existence of strong problems regarding the understanding of the basic process of the Code, and solutions to these problems should be sought. It is now more than time that the Code be modified in order to become clearer for all users, and Dubois (2008a,c) suggested that one possible way to do so would be to change the plan of the Code.

The plan used in the Code is a non-hierarchical one. This book consists in three introductory texts followed by the Code itself, containing a Preamble, 18 chapters, a Glossary, a sketch giving a 'Summary of the status of works, names and nomenclatural acts' (p. 123) and two Appendices. The 18 chapters are presented in an order that has remained unmodified through successive editions and modifications of the Code. This order is not logical and does not help the readers and users of this book to understand clearly the way the Code works. The sketch on page 123 provides a clear survey of the logical structure of the Code, but, although it is part of the latter, it appears at the end of this document, between the Glossary and Appendices, and is never referred to in the chapters giving the rules themselves, so it probably remains unnoticed by most readers and users of the Code.

The Code in fact contains six different kinds of items: (1) a few general *Principles*, which are the 'philosophical basis' of the whole work; (2) a rather high number of *Rules*, which correspond to the concrete implementation of these general Principles with respect to the various situations and problems encountered in zoological nomenclature; (3) a rather high number of *Exceptions* to these Rules, with explanations about the dates and situations when and where they apply; (4) various *Examples* that are meant to clarify some Rules or Exceptions; (5) various *Recommendations* (including a Code of Ethics in Appendix A), which do not have the binding force of Rules but that zoologists are encouraged to follow; and (6) a *Glossary* giving the definitions of some (not all) technical and non-technical terms used in the book. Except for the Glossary and for some of the recommendations that appear in the Appendices, all these pieces of information appear intermingled in the chapters, without any hierarchical presentation.

This plan is not good, a fact that had been clearly stressed already 25 years ago by one commissioner (Dupuis, 1984), but without any result. For a better understanding and use of the Code, drastic changes in the structure and presentation of this text should be considered. It would be necessary first to present clearly the Principles on which this text is based, in an introductory chapter, as is the case in the International Code of Botanical Nomenclature (McNeill et al., 2006). Each of these Principles concerns only one of the three stages of the nomenclatural process, availability, allocation and validity of names. Then the book should be divided in three major parts corresponding to these three floors, not in 18 chapters in an illogical order. Most of these chapters only concern one of these three stages, but a few are heterogeneous in this respect. Ignoring these minor problems and putting apart the introductory chapter C1 (Zoological Nomenclature) and the two concluding chapters (C17 The International Commission on Zoological Nomenclature; C18 Regulations governing this Code), the 15 other chapters can be distributed as follows regarding the floors of the nomenclatural process to which they apply, either in full or in most of their content (as some are heterogeneous in this respect):

Floor 1, Availability of names: C2 The number of words in the scientific names of animals; C3 Criteria of publication; C4 Criteria of availability; C5 Date of publication; C7 Formation and treatment of names; C8 Family-group nominal taxa and their names; C9 Genus-group nominal taxa and their names; C10 Species-group nominal taxa and their names; C11 Authorship.

Floor 2, Allocation of names: C13 The type concept in nomenclature; C14 Types in the family group; C15 Types in the genus group; C16 Types in the species group.

Floor 3, Validity of names: C6 Validity of names and nomenclatural acts; C7 Formation and treatment of names; C8 Family-group nominal taxa and their names; C9 Genus-group nominal taxa and their names; C10 Species-group nominal taxa and their names; C12 Homonymy.

The illogical structure of this plan is clearly apparent through the fact that the numbers of the chapters are not in a continuous sequence in the lists of chapters of each of these three floors above. To take just an example, the place of chapter 6 is completely wrong. How can a user understand the way validity of names works without first knowing how names are allocated to taxa? This chapter should come as the last but one chapter of the whole, just before chapter 12 on homonymy, that should be followed by articles dealing with the correct spelling of names (distributed in Chapters 7 to 10). Thus, for more clarity, the chapters should be renumbered and arranged according to the three parts outlined above. Many other changes should also be implemented into most of these chapters and in the arrangement of the latter, but these technical points need not be discussed here in detail.

Registration as a fourth floor of the Code

It is important to distinguish two fully distinct aspects in Zoobank:

(1) Zoobank will provide a database for zoological names and nomenclatural acts. If ever complete or almost so, and reliable concerning the information provided, such a database will undoubtedly be very useful to all taxonomists worldwide. This point is not discussed here.

(2) The Commission proposes a drastic change in the rules of nomenclatural availability of zoological names, regarding names and acts first published electronically and not on paper. For the availability of such names and acts, online registration in the Zoobank database would be mandatory. This project, which would change one of the bases of the Code, is questioned here.

A complete database including all zoological names (from variety and form to class and phylum) and all nomenclatural acts validly published after 1757 would of course be a very useful tool for taxonomists worldwide. However, as noted above, incorporation of all available names, associated with basic nomenclatural (first-revisers action, homonymy, objective synonymy) and taxonomic (subjective synonymy, subordinate and superordinate taxa currently recognised) information, is an enormous work, which will require appropriate funding as it cannot be a voluntary work asked from individual zoologists. The same applies to the registration of newly published names, which is not easy for example for zoologists in countries where access to the internet is intermittent or costly, even in times of peace (see Funk et al., 2005). It can be argued that authors who would first publish a new name in electronic format would indeed have access to the Web, but it is not difficult to predict that, in the minds of some commissioners at least, this proposed new rule is only a first step

towards the goal of rendering mandatory the registration of all new names and acts, even if published on paper. This option had indeed been vigorously defended by some contributors of the early discussions on the Zoobank project, in the BZN and in online forums.

I strongly feel that availability of names must remain attached to a single publishing act. For this, paper publication, which has existed for hundreds of years and which will no doubt exist as long as human civilisations, is doubtless the best one. Allowing two different systems (paper and electronic), and furthermore linking one of them with a second condition (registration), is an awkward and dangerous system, in fact a reliable recipe for chaos. What will occur if only one of the two conditions is met, e.g. only online publication but no registration? Unavailability? But who will know? Among the candid users of the internet, who will make the difference between (1) publication on an authorised online medium ('with fixed content and format', according to the proposed new Article 8.1.3.2), coupled with registration, (2) simple publication on an unauthorised online medium, and (3) simple registration not followed by online or paper publication? These discrepancies may proceed from inadvertent errors, from problems concerning the author (health problems, change of work or address, death) or even from deliberate refusal to register.

Under the current Code, it is already a very specialised work to check that all conditions of availability, beside paper publication, are met. There is no need to add others. Of course, specialists of nomenclature would be, or should be, able to notice these new problems, and to recognise that names and acts in the categories (2) and (3) are unavailable. However, this will require from them a double checking, in the electronic publication and in Zoobank, whereas for the time being any experienced taxonomist can know if a name is available by simple examination of the original paper publication. But how many candid users of names will be able to do this? If such a complicated system were implemented, it can be predicted that it would create many confusions and problems in online documents, including non-taxonomic online or even paper publications that make use of zoological names, and the editors of which do not have the proper competence in nomenclature. This system must be abandoned and a new one proposed, for establishing a simple, proper use of registration in the nomenclatural process. In other words, registration must be completely disconnected from availability.

My proposal is to consider registration of names and nomenclatural acts as a fourth floor of the nomenclatural process, independent from availability, allocation and validity. Availability would remain attached to paper publication, with numerical criteria regarding the number of required printed copies and library deposition, as discussed above. A name just published electronically, or in too few paper copies, would remain unavailable, as in the current Code. Electronic registration would be an independent step, which would change the status of the name from unregistered to registered. The practical consequences of registration would be that the name or nomenclatural act would then appear in Zoobank, and be protected against potential oblivion by the international community, thus from falling under the possible use of the *nomen oblitum* Rule to invalidate it in case of absence of use.

Implementation of this proposal would imply only minimal changes in the Code. Registration of names and nomenclatural acts would be entirely voluntary. It could be carried out by the authors of the new names, by the editors of the concerned

publications, by the Commission, or by any zootaxonomist worldwide, for example on the occasion of a first use of a nomen, if the latter has not been registered previously.

Registration of names on Zoobank will no doubt be exerted through electronic connection to the site of Zoobank, and the content of this site will be available online. However, for the reasons stated above regarding electronic publication, I think this database should not exist only in electronic form. I suggest that, every year, a volume be published by the Commission, including all the names and nomenclatural acts, as well as all additions and corrections to the previous situation, entered in this database during the preceding year. This yearly paper volume of Zoobank would be sent free to a group of libraries (e.g. as suggested above, 40 distributed in 8 main regions of the world), and could be available by subscription or purchase by other libraries or individuals. The price should remain moderate, so that many libraries, especially of institutions devoted to taxonomic research (in particular museums), could subscribe.

Registration and the Reversal of Precedence Rule

What would be the long-term consequences for a name not to be registered? I suggest that, after a fifty-year period, this nomen, if unused in zoological taxonomy and in concurrence for synonymy or homonymy with another name used in taxonomy, could be rejected as a nomen oblitum under the 'Reversal of Precedence' procedure. This would require some modification of Article 23.9.

For the time being, this Article can only be applied to reject as nomen oblitum a name unused as valid after 1899, so that it cannot apply to a name created after 1899, which by definition was used as valid at least once. This Article in its current wording is not satisfactory, for reasons explained in detail elsewhere (Dubois, 2010b). It could be modified in two directions, in order (1) to protect really widely used names, even if only for half a century, against the potential threat of older synonyms or homonyms, but (2) also to avoid protecting obscure names that have been used only a few times, especially by a small group of colleagues.

Hence the suggestion (Dubois, 2006a, 2010b) that, to be liable to be protected under this Article, a name should have been mentioned as available (not valid) and used (1) either in the titles of at least 25 not purely systematic books, written by at least 25 independent authors from at least 10 different countries; (2) or in the titles of at least 100 not purely systematic publications written by 100 independent authors from at least 10 different countries. Dubois (2006a) provided detailed justification of the choice of these numbers and of the restriction to not purely systematic publications. The numbers recommended may appear high at first reading, but for really well-known names like *Amphibia*, a single year is more than sufficient to meet this criterion. If it is not met after 250 years of taxonomy, the name cannot honestly be considered 'well-known'. These figures can be discussed, but what is important here is that, to be eligible for validation, a name should really have been widely used at international level by many non-specialists, and no other name should have been similarly used for the same taxon. Whenever such conditions are indeed met, the rules of the Code should allow automatic and permanent validation of the well-known nomen, through 'Reversal of Precedence' in many cases, or through other nomenclatural actions in some rarer cases (e.g. change of author and date, or of onomatophore, whenever the latter is found not to correspond to the widespread use of the nomen).

Addition of the fourth floor to the Code would have a strong consequence upon this Article: once registered, a name would be protected against Reversal of Precedence as, being included in Zoobank, it could not be considered 'forgotten'. Therefore, Article 23.9 should be stated to apply only to unregistered names. If, at the time of publication of a taxonomic work, an unregistered name threatens a junior registered synonym or homonym, with numbers of uses corresponding to the conditions above, the former could be invalidated as a *nomen oblitum* and the latter validated as a *nomen protectum* on the basis of this Article. This could be done by any zoologist worldwide, without having to apply to the Commission. Subsequent registration of the invalidated name would be possible, but would not allow nullification of the Reversal of Precedence so executed.

On the other hand, in cases of subjective synonymy, the invalidation of a junior synonym according to this Article would be liable to be nullified if the synonymy is challenged. The same would apply to the situation of secondary homonymy: if a specific *nomen*, invalidated through this Article, was transferred to another genus where it would not be a homonym, then its nomenclatural status would have to be re-evaluated according to the new situation.

The protection against potential Reversal of Precedence should be a strong encouragement for zoologists to register their new names, as well as all the other names created by colleagues which they use in their works and that might not yet have been registered. For this purpose, registration can take place at any date during the fifty years following the valid publication of the *nomen*, as the date of availability of a *nomen*, which is the only one relevant for priority, would remain attached to the original date of paper publication, not to the date of registration.

Finally, it must be stressed that registration of a name would not protect it against potential synonymisation with a senior registered synonym, nor with invalidation because of the existence of a senior registered homonym. This situation would be the same as that of a *nomen*, once placed by the Commission on one of its Official Lists to protect it from an invalidated senior synonym or homonym, but which may nevertheless be later invalidated as a result of taxonomic changes that make it become a junior synonym or secondary homonym of another widespread and well-established *nomen*.

Registration and authorship

Registration, as described above, is a nomenclatural act, distinct from that of publication of a *nomen*, and always subsequent to it. Both a publication and a name have an author (which is a signature, not a person, and therefore can be composed of several names: see Dubois, 2008b). A given name may be modified by subsequent authors, either in its onymorph (Smith & Pérez-Higareda, 1986), e.g. whenever a specific name is combined with a different generic *nomen*, or in its spelling, e.g. whenever a family name is used at suprafamilial, subfamilial, tribal or subtribal rank. Such modified spellings or onymorphs are not properly new names, as they have the same author, date and onomatophore as the original name or protonym (Dubois, 2000). They qualify as aponyms, and they do not have authors, but first-users and dates (Dubois, 2000). The nomenclatural act of registration also has a date, and is to be credited to a registrant, which is one or several persons. The date of registration has no bearing on availability, on priority and hence on validity, except in the case

of a registered name being threatened by another senior name that has not been registered 50 years after its publication, in which case Article 23.9 (Reversal of Precedence) may be called upon.

Discussion

In November 2007, the Linnean Society organised in London a meeting on the registration of names, and a motion was put to the vote, first before and second after the debate, asking whether nomenclatural registration should be made compulsory. Six orators spoke to present the experiences in this domain and to support compulsory registration, and finally two orators spoke on the motion itself, one (McNeill) for and one (myself) against. This Bulletin provided an account of this meeting (Hawksworth, 2009), but only the texts of the first six talks, which were all in favour of mandatory registration of names, were published. Interestingly, I was not invited to provide the text of my proposed lecture at this meeting (Dubois, 2007c). A very brief, and incomplete (ignoring some important points of my talk), summary of it was given, which makes it difficult for the readers to understand how a single orator against 7 could have convinced part of the audience to change their mind. Some of the arguments I developed then appear above, and others were mentioned independently by Welter-Schultes et al., so they are not repeated here. I concluded my lecture in London with the sentence: 'It is urgent to wait!'. In response to some statements published in this Bulletin, I stated that the 250th anniversary of Linnaeus's tenth edition should not be used as a pretext to impose stealthily a basic reform in zoological nomenclature that had been discussed only by a small group of colleagues and the intention of which was unknown to most zoologists worldwide, and opposed by some of those who had heard about it. Such a change would be so drastic that it could be adopted only during a plenary general meeting of a world congress convoked especially for this purpose, after wide publicity in all zoological journals of the world for at least one year before the vote. Perhaps voting should also be possible by mail or e-mail, but drastic criteria of control of voters through this medium should be thought of and implemented, to avoid lobbying and manipulation. Let us remember that, when asked to vote on a similar proposal, botanists, who have a more democratic system for changing their Code than zoologists (through international congresses, not through a Commission composed of co-opted members), rejected it, but this did not change the attitude of the 'responsibles' in favour of it (see Hawksworth, 2009). Is this because important financial benefits can be expected in the medium or long term for the companies that will provide and care for the sites where registration will be made? Of course, we all know that we live in a historic period when, if a majority of voters refuses a proposal (e.g. in recent national votes in France or Ireland), they may be asked to vote again until the result has the agreement of the power. But science should remain outside such a lamentable process.

In the past, the Commission has made a number of errors and taken a number of questionable decisions. This has nothing surprising or shocking, as any person or human group is liable to make mistakes; the only way not to make errors is not to do anything. A striking mistake made by the Commission in recent times was the decision to allow the availability of names or nomenclatural acts through publication on laser-disks such as CD-ROM and DVD. This was implemented in the fourth

edition (1999) of the Code, and the Commission now proposes to disallow such publications as of 2009. So this new rule has been in force for a ten-year period only, after 1999 and before 2010. If anything, this shows that this change had been decided too hastily, and this problem could have been avoided if the decision had been postponed for a few years or decades. However, it does seem that the lesson of this failure has not been learnt. The Commission seems to be eager to stick to 'modern techniques' and to follow the emergence of new processes of publication and archiving of data and documents. The urgency of such decisions is questionable, if some of them happen to be nullified ten years from now. At any rate, this certainly does not encourage support of the proposed new Article 8.6 of the Code, which would allow the Commission alone to decide to accept new methods of production, distribution, formatting and archiving to confer nomenclatural availability. Just like the proposal of online publication, such new proposals should be thought about collectively and for a sufficient period by the whole community of zoologists, and decisions should be taken during an international congress.

Conclusion

In conclusion, I warmly support the opinion of Welter-Schultes et al., according to whom nomenclatural availability should remain attached to paper publication and not allowed by electronic means of any kind (whether on physical support like CD-ROM or DVD, or through electronic communication online). Furthermore, precise numerical criteria should be implemented for allowing a paper publication to provide nomenclatural availability, as detailed above.

As for registration of names and nomenclatural acts in Zoobank, it should be completely disconnected from the first three floors of the nomenclatural building (availability, allocation and validity) and should constitute a fourth, independent floor. Registered names would be protected from oblivion, and in particular from potential invalidation by Reversal of Precedence in case they threaten well-established junior synonyms or homonyms used for at least 50 years in a significant number of non-taxonomic publications. The precise numerical criteria for such cases are proposed above.

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Case 3501***Acarus putrescentiae* Schrank, 1781 (currently *Tyrophagus putrescentiae*; Acariformes, ACARIDAE): proposed conservation of usage by designation of a replacement neotype**

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Abstract. The purpose of this application, under Article 75.6 of the Code, is to conserve the current usage of the name *Tyrophagus putrescentiae* (Schrank, 1781) for a ubiquitous, medically and economically important species of acariform mite (family ACARIDAE) by setting aside the existing name-bearing type and designating a replacement neotype. Cultures of this mite species are maintained in many research institutions or companies and are commercially traded as a source of mite allergens, food for phytoseiid mites used in biological control, and for various molecular biology applications. A recent taxonomic treatment indicated that the taxonomic concept of *T. putrescentiae* involved two closely related species, one common and one rare, and the neotype designated by Robertson (1959) for *T. putrescentiae* corresponds to the rare species; the common species was renamed as *Tyrophagus communis* Fan & Zhang, 2007. We demonstrated that the prevailing usage of the name *T. putrescentiae* comprises almost exclusively the common species, the name *T. communis* is a junior synonym of eight previously named taxa with extant types, and we proposed a new name for the rare species: *Tyrophagus fanetzhangorum* Klimov & OConnor, 2009. The stability of zoological nomenclature is therefore threatened by the following: (1) the prevailing usage of the name *T. putrescentiae* was not maintained by Fan & Zhang (2007); (2) the name *T. communis* proposed for the common species is a junior synonym and, therefore, not valid; and (3) besides the eight taxa for which synonymy with the common species was verified by us, types of older taxa may also be discovered in the future thus posing another nomenclatural challenge. We propose to conserve the prevailing usage of the name *T. putrescentiae* by designation of a new neotype from a culture currently maintained in a research institution, which was cited in many published works and started from specimens collected close to the type locality of *T. putrescentiae*.

Keywords. Nomenclature; taxonomy; Chelicerata; Acariformes; ACARIDAE; *Tyrophagus*; *Tyrophagus putrescentiae*; *Tyrophagus fanetzhangorum*; *Tyrophagus communis*; allergy; agricultural pest; stored product pest; Czech Republic; cosmopolitan.

1. Schrank (1781, p. 521) proposed the name *Acarus putrescentiae* for specimens originally described by him from the 'Austrian Empire' in garden soil, flower pots, and rotting leaves (Schrank, 1776, p. 34, pl. I, figs. 28, 29). The taxon as described and

illustrated involves two arthropod species, a mite and a springtail, and the mite cannot be confidently placed into a family based on the original description and figures.

2. Oudemans (1906, p. 138) treated *Acarus putrescentiae* as a species 'indeterminabilia' and, based on the habitat similarity only, as potentially identical to *Tyroglyphus longior* Gervais, 1844 (where Oudemans placed many currently recognised *Tyrophagus* species). He later designated *Acarus putrescentiae* Schrank, 1781 as the type species of the subgenus, *Tyrophagus* Oudemans, 1924, in the genus *Tyroglyphus* Latreille, 1796 (Oudemans, 1924a, p. 250) (currently a junior synonym of *Acarus* Linnaeus, 1758). Subsequently, he clarified his concept of *Acarus putrescentiae*, again giving no evidence, except for the habitat preference, for its identity with Schrank's species (Oudemans, 1924b, p. XXIII). The identity of *Tyrophagus putrescentiae* sensu Oudemans was uncertain (Hughes, 1948, pp. 20–21; Robertson, 1946, p. 198; Vitzthum, 1929, p. 75; Zachvatkin, 1941, p. 99).

3. Robertson (1959, p. 157), in her revision of *Tyrophagus*, designated a neotype for *A. putrescentiae* from Oudemans's collection, choosing a male collected in humus by Oudemans in 1902 in the Netherlands. However, she figured and partially described *T. putrescentiae* based on specimens from England (Robertson, 1959, pp. 157–160, figs. 3, 6, 9, 12, 15, 18, 21, 35). In designating the neotype, Robertson gave no evidence that it was consistent with the original description. An application (Case Z.N.(S.)1450) to the Commission to place *putrescentiae* Schrank, 1781 as defined by her neotype on the Official List was published in April 1981 (BZN 38: 125–129). In her reply to criticism from some members of the Commission, she stated that 'there are no such [conflicting] characters debarring *putrescentiae* from such acceptance [as a species of *Tyrophagus*]' (BZN 42: 124–126 (June 1985)), although the numerous leg setae and the free palps protruding from the gnathosoma clearly indicate that Schrank's mite specimen (Schrank, 1776, Fig. 28) does not even belong to Astigmata. The Commission, however, approved the proposal in Opinion 1298 (BZN 42: 124–126 (June 1985)). Robertson's taxonomic concept of *T. putrescentiae* was universally followed thereafter.

4. Fan & Zhang (2007, p. 21) discovered that Robertson's concept of *T. putrescentiae* included two closely related species, one common and one rare, and that the neotype represented the rare species. For the common species, Fan & Zhang (2007, p. 18) proposed a new name, *Tyrophagus communis* Fan & Zhang, 2007, without considering previously described taxa.

5. The authors (Klimov & OConnor, 2009, pp. 101–107) showed that *Tyrophagus communis* was identical with eight previously described taxa with extant types: *Tyrophagus americanus* (Banks, 1906); *T. breviceps* (Banks, 1906); *T. cocciphilus* (Banks, 1906); *T. castellanii* (Hirst, 1912); *T. australasiae* (Oudemans, 1916) (tentative synonymy); *T. neotropicus* (Oudemans, 1917); *T. amboinensis* Oudemans, 1925; *T. nadinus* (Lombardini, 1944). Ten additional taxa possibly identical to this species, including *Coelognathus morsitans* Hessling, 1852, *Tyroglyphus lintneri* Osborn, 1893, and *Tyroglyphus ananas* Tryon, 1898, were treated as species inquirendae, because their types could not be located (Klimov & OConnor, 2009, pp. 108–109).

6. An extensive survey showed that the common species, under the name *T. putrescentiae*, was involved in the majority of studies published during the past 20 years. The rare species was involved in only one of 31 published studies (14 authors) (Klimov & OConnor, 2009, Table 3, p. 99). Commercially available cultures and DNA sequence data from GenBank (Klimov & OConnor, 2009, Table 2, p. 98) were also

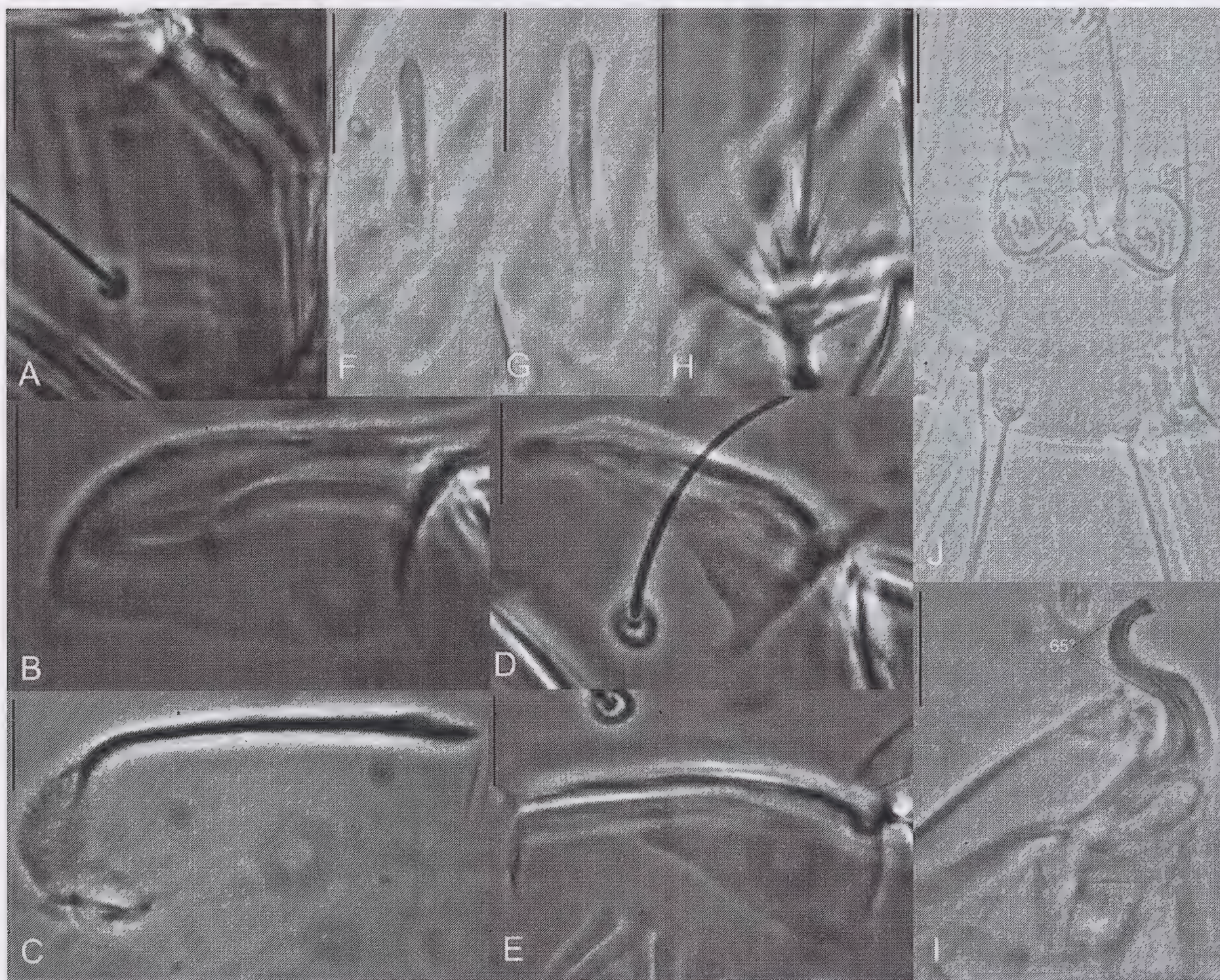


Fig. 1. *Tyrophagus putrescentiae* (Schrank, 1781) – proposed neotype (UMMZ BMOC 08–1010–002–1). A–B, D–E – anterior coxal sclerotisation I–IV, respectively; C – posterior coxal sclerotisation II; F–G – solenidion ω_1 , I–II, respectively; H – supracoxal seta (*scx*), I – aedeagus; J – anus and anal suckers; D – total view of the slide with labels. Scale bar = 10 μ m (A–I), 20 μ m (J). Figures 1B, H, I are reproduced from *International Journal of Acarology*, with permission.

studied. There are hundreds of studies on *T. putrescentiae* and thousands of DNA sequences in GenBank (Klimov & OConnor, 2009, Table 1, p. 97); unfortunately, not all authors involved preserved vouchers for their studies or responded to our inquiries.

7. Changes resulting from the work of Fan & Zhang (2007) not only impose maximal disruption on the stability of nomenclature of *Tyrophagus*, one of the most common and intensively studied group of mites, but they are also in a position to jeopardise numerous applied studies in the fields of allergology, molecular biology, agriculture, and stored product research, employing *T. putrescentiae* as a model species. Under Article 75.6 of the Code, the authors investigated the possibility for a new neotype to conserve the prevailing usage of the name *T. putrescentiae*, including specimens from both Oudemans's and Robertson's collections (Klimov & OConnor, 2009, p. 100). Because no single specimen displaying all diagnostic characters of the common species could be found in these collections, a potential neotype with the following data was suggested: 'male – Czech Republic, Buštěhrad, grain store, April 1996 (UMMZ BMOC 08–1010–002)' in the University of Michigan, Museum of Zoology. The rationale for this is that the collection locality is close to the original type locality, specimens from the culture are available for gene sequencing and breeding experiments (a live culture from which this

specimen was obtained is maintained in the Crop Research Institute, Czech Republic), and eight published papers have been based on specimens from this culture. This specimen was described and illustrated along with other specimens from the same culture (Klimov & OConnor 2009, p. 109, figs. 1a–h, 2a–h, 3a–h, 4a, b, f, g). For the rare species, the authors proposed a new name, *Tyrophagus fanetzhangorum* Klimov and OConnor, 2009 (Klimov & OConnor, 2009, p. 109, figs. 1i–l, 2a–j, 3i–l, 4c–e, h).

8. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to set aside all previous type fixations for the nominal species *putrescentiae* Schrank, 1781, as published in the binomen *Acarus putrescentiae*, and to designate specimen BMOC 08–1010–002–1 at the University of Michigan, Museum of Zoology as the neotype;
- (2) to emend the entry on the Official List of Specific Names in Zoology for the name *putrescentiae* Schrank, 1781, as published in the binomen *Acarus putrescentiae*, to record that it is re-defined by the neotype designated in (1) above.

Acknowledgments

This work was supported by a grant from US National Science Foundation (NSF DEB-0613769).

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Acknowledgement of receipt of this application was published in BZN **66**: 204.

Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to the Executive Secretary, I.C.Z.N., c/o Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).

Case 3504

Onthophagus rugulosus Harold, 1886 (Coleoptera, SCARABAEIDAE): proposed conservation of the specific name

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Abstract. The purpose of this application, under Article 23.9.3 of the Code, is to conserve the specific name of the dung beetle *Onthophagus rugulosus* Harold, 1886 (Coleoptera: SCARABAEIDAE), a widespread species from East Asia, by suppressing the senior secondary homonym *Elytridium rugulosum* Heer, 1870, a fragmentary fossil from the Miocene of Spitsbergen, Norway, that was transferred to *Onthophagus* in 1977. A replacement name, *O. spitsbergeniensis* nom. nov., is proposed for the dubious fossil species.

Keywords. Nomenclature; Coleoptera; SCARABAEIDAE; *Onthophagus*; *Elytridium*; *Onthophagus rugulosus*; dung beetles; Miocene; East Asia; Spitsbergen.

1. Heer (1870, p. 78) described the fossil species *Elytridium rugulosum* from an elytron from the Miocene of Spitsbergen, Norway, which he tentatively classified as a ground beetle (Coleoptera: CARABIDAE).

2. Harold (in Heyden et al., 1886, p. 289) described the extant species *Onthophagus rugulosus* from the surroundings of Beijing, China (Coleoptera: SCARABAEIDAE). The species is distributed from China to Assam, Korea and Vietnam (Löbl et al., 2006). The name has two junior subjective synonyms, *O. expansicollis* Fairmaire, 1891 (synonymised by Boucomont, 1919) and *O. sonani* Miwa, 1930 (synonymised without explanation by Nomura, 1973, p. 49; not listed as a synonym by Kabakov, 2006, p. 308). I am not aware of any use of *O. expansicollis* as a valid name after its description. *O. sonani* has rarely been used as valid (Miwa, 1931, p. 282; Matsumura, 1938, p. 55; as a dubious species by Balthasar, 1963, p. 532; and in the secondary incorrect spelling '*Onthophagus sonorni* Miwa' by Kim, 1960, p. 27 and Anonymous, 1967, p. 198). *Onthophagus rugulosus* is a commonly used name in all standard monographs and frequently included in faunistic papers of the region (e.g. Bates, 1888, p. 371; Reitter, 1893, p. 51; Boucomont, 1914, p. 301; Boucomont & Gillet, 1921, pp. 35, 54; Arrow, 1931, p. 227; Balthasar, 1935, p. 335; 1963, p. 507; Matsumura, 1937, p. 2, 1938, p. 55; Paulian, 1945, p. 125; Cho, 1957, p. 289; Moxey, 1963, p. 26; Nomura, 1973, p. 49; Paik, 1976, p. 154; Kim, 1977, p. 332; 1985, pp. 3, 11; 2000, p. 73; Kabakov, 1979, p. 82; 2006, p. 308; Stebnicka, 1980, p. 226; Kim & Lee, 1991, p. 66; Kim et al., 1991, p. 179; Kabakov & Napolov, 1999, p. 86; Chen, 2002, p. 232; Zhang & Luo, 2002, p. 434; Krajcik, 2006, p. 130; Löbl et al., 2006, p. 166). *O. rugulosus* is the type species of the subgenus *Sinonthophagus* Kabakov, 2006.

3. Birket-Smith (1977, pp. 25–26) reinterpreted Heer's holotype and transferred *Elytridium rugulosum* to the genus *Onthophagus* Latreille, 1802: '*Onthophagus s. lat. rugulosus* (HEER, 1870) comb. nov. (nec. HAROLD in LEYDEN, 1886.)' [sic]. Although Birket-Smith recognised the homonymy with Harold's name, he neither commented nor acted on it. The name has subsequently been used in this combination as valid only by Krell (2007, p. 46), but having overlooked Birket-Smith's paper, I considered this combination doubtful at the time. Judging from the photographic documentation provided by Birket-Smith, the generic placement might well be correct although the species might equally be classified as belonging to another genus of the ONTHOPHAGINI, e.g. *Caccobius*. Since we cannot exclude the possibility that it belongs to *Onthophagus*, there is no justification for changing Birket-Smith's classification, and *Onthophagus rugulosus* (Heer, 1870) is a senior secondary homonym of *Onthophagus rugulosus* Harold, 1886.

4. The replacement of the widely used name *Onthophagus rugulosus* Harold, 1886 by either a dubious name (*O. sonani* Miwa, 1930) or an unused name (*O. expansicollis* Fairmaire, 1891) just because we cannot exclude the possibility that the fossil *Elytridium rugulosum* Heer, 1870 represents an *Onthophagus* would be likely to cause confusion. The suppression of Heer's name, that has rarely been cited in the literature, would have hardly any destabilising effect. I propose the name *Onthophagus spitsbergeniensis* **nom. nov.** for *Onthophagus rugulosus* (Heer, 1870). The species name is an adjective and derived from the type locality Spitsbergen. Since it is the only *Onthophagus* species recorded from Spitsbergen (Kangas, 1973) it should be obvious from the name that it refers to Heer's fossil species.

5. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to suppress the specific name *rugulosum* Heer, 1870, as published in the binomen *Elytridium rugulosum*, and all uses of the name before Harold (1886) for the Purposes of both the Principle of Priority and the Principle of Homonymy;
- (2) to place on the Official List of Specific Names in Zoology the following names:
 - (a) *rugulosus* Harold, 1886, as published in the binomen *Onthophagus rugulosus*;
 - (b) *spitsbergeniensis* Krell, 2010, as published in the binomen *Onthophagus spitsbergeniensis*, the replacement name for *Elytridium rugulosum* Heer, 1870;
- (3) to place on the Official Index of Rejected and Invalid Specific Names in Zoology the name *rugulosum* Heer, 1870, as published in the binomen *Elytridium rugulosum* and as suppressed in (1) above.

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Acknowledgement of receipt of this application was published in BZN **66**: 297.

Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to the Executive Secretary, I.C.Z.N., c/o Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).

Case 3436***Pachynematus* Konow, 1890 (Insecta, Hymenoptera): proposed precedence over *Epitactus* Förster, 1854**

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Abstract. The purpose of this application, under Article 23.9.3 of the Code, is to conserve the widely used sawfly generic name *Pachynematus* Konow, 1890 by giving it precedence over a very rarely used senior subjective synonym *Epitactus* Förster, 1854, whenever the two are considered to be synonyms. Under Article 24.2, the description of *Pachynematus* by Konow (1890a) is determined to have conferred availability on the genus name, not the simultaneous description by Konow (1890b). The type species of *Pachynematus* by subsequent designation of Schmidt et al. (1998) is *Nematus trisignatus* Förster, 1854, currently regarded as a synonym of *Pachynematus clitellatus* (Serville, 1823). This species and some of its close relatives are of economic significance as pests of cereal and grass-fodder crops in North America, Europe and China.

Keywords. Nomenclature; taxonomy; Hymenoptera; TENTHREDINIDAE; NEMATINAE; *Pachynematus*; *Epitactus*; *Nematus trisignatus*; *Epitactus praecox*; sawflies; Holarctic.

1. Förster (1854b, p. 435) described the monotypic genus *Epitactus* together with its type species *Epitactus praecox* Förster, 1854 (Förster, 1854b, pp. 435–436). The only character used to distinguish *Epitactus* Förster, 1854 from *Nematus* Panzer, 1801 (plate 82:10 and unnumbered page of facing text) was a difference in forewing venation; vein 2m-cu in the forewings meets M in cell 2RS in *Epitactus* and in cell 1RS in *Nematus* (the generic name *Nematus* was incorrectly attributed by Neave, 1839, v.3, p. 284, to Jurine (1807)). Förster gave no indication of the number of specimens on which he based his description.

2. Kriechbaumer (1885, pp. 9–10) examined the only known syntype of *Epitactus praecox* Förster, 1854 and determined this as a specimen of *Nematus capreae* (Panzer, 1799, plate 65:8 and unnumbered page of facing text) sensu Zaddach, 1876 (pp. 75–78) with abnormal wing venation. *Tenthredo capreae* Panzer, 1799 is not an available name, but a misidentification of a different taxon as *Tenthredo capreae* Linnaeus, 1758 (p. 559). *T. capreae* Linnaeus is a junior subjective synonym of *Nematus salicis* (Linnaeus, 1758, p. 557); see Schmidt et al., 1998 (p. 281). That Panzer was merely interpreting *Tenthredo capreae* Linnaeus and did not intend to describe a new species is demonstrated by Panzer's citation of previous descriptions by Linnaeus, Fabricius and others. Nevertheless, the name *N. capreae* (Linnaeus, 1758) sensu Panzer, 1799 (= *Pachynematus clitellatus* (Serville, 1823, p. 64)) was at Kriechbaumer's time widely used, with Panzer erroneously given as author, for the species now known as *Pachynematus clitellatus* (see Schmidt et al., 1998, p. 279). The

reasons for the long-lasting confusion about the application of the name *Tenthredo capreae* result partly from the difficult interpretation of the original description by Linnaeus based on larvae (Schmidt et al. 1998, pp. 279–281) and partly because the colour illustration of an adult published by Panzer under this name seems to represent what is now called *Pachynematus clitellatus*. Examination by Liston in 2006 of the lectotype female, in perfect condition, of *E. praecox* in the A. Förster Collection (Zoologische Staatssammlung, Munich) confirmed that this is conspecific with *P. clitellatus*. The syntype studied by Kriechbaumer is undoubtedly the same specimen that was designated as lectotype of *E. praecox* by Haris (1997), because Kriechbaumer discussed in detail the position of vein 2m-cu in the forewings also described by Förster (1854), which has so far only been found in this single specimen.

3. Konow (1890a, pp. 233, 238) and Konow (1890b, pp. 246–247) described the genus *Pachynematus* as new in two separate papers published simultaneously in the same journal issue. Either of these publications would alone have been sufficient to have established the generic name: the former because of the diagnosis (Article 12.1 of the Code), the latter because of the explicit inclusion of many available nominal species (Article 12.2.5). Following Article 24.2 (Determination by the First Reviser), the present author chooses Konow (1890a) as the publication that made the name *Pachynematus* available. No type species was designated for *Pachynematus* in either publication by Konow, but amongst 28 nominal species included by Konow (1890b) in the genus was '*N. Capreae* Pz.' (a misidentification of *Tenthredo capreae* Linnaeus, 1758: see above; actually *Nematus clitellatus* Serville, 1823), with the names '*N. haemorrhoidalis* Htg.' (i.e. *Nematus haemorrhoidalis* Hartig, 1840, p. 26), '*N. Kirbyi* Thms.' (i.e. *Nematus kirbyi* Dahlbom, 1835, p. 40) and '*N. trisignatus* Först.' (i.e. *Nematus trisignatus* Förster, 1854a, pp. 292–294) listed as its synonyms.

4. Rohwer (1911, p. 85) subsequently designated '*Nematus capreae* Panzer = *Nematus trisignatus* Förster' as type species of *Pachynematus* Konow, 1890. Rohwer's designation was correctly considered to be invalid by Schmidt et al. (1998, p. 281) because the name *Nematus capreae* Panzer is not available. The latter authors then designated *Nematus trisignatus* Förster, 1854 as type species of *Pachynematus*. Schmidt et al. misquote Rohwer, claiming that he designated *Tenthredo capreae* Panzer as the type species, but this mistake has no bearing on the validity of their action. Note that under Article 67.2.1 and the Code's Glossary definition of 'type species', both of which refer to 'a species', it may be inferred that an author is obliged, when designating a type species for a genus, to give a single name or, failing such, the name cited as the correct name (and not any explicitly mentioned synonym) is the only one to be regarded as having been designated as type. Furthermore, a strict reading of Article 67.2.1 leads to the conclusion that mentioned synonyms of 'originally included species' (such as *trisignatus* in the present Case) count as additional 'originally included species' if their names are available. Very important is the statement by Schmidt et al. that their designation of a type species was made because the name designated by Rohwer is not available. In the light of this statement, neither Article 69.2.4 nor Article 70.3, dealing with misidentified type species, bears on the validity of the type designation by Schmidt et al. (1998). *Nematus trisignatus* Förster, 1854, currently regarded as a synonym of *Pachynematus*

clitellatus (Serville, 1823), is accordingly accepted as type species of *Pachynematus*, by subsequent designation of Schmidt et al. (1998).

5. Abe & Smith (1991, pp. 30, 106) treated *Epitactus* Förster, 1854 as a valid genus. *Epitactus* can therefore not be regarded as a nomen oblitum.

6. Based on mistaken interpretation of Article 1.3.2 of the Code, Liston (1995, p. 173) wrongly regarded *Epitactus* Förster, 1854 as an unavailable name. It was not considered to be a teratological specimen by Förster himself, so this Article does not apply.

7. Haris (1997, p. 116) designated a lectotype for *Epitactus praecox* Förster, 1854, and treated the species name as a junior synonym of *Pachynematus clitellatus* (Lepeletier, 1823). *Nematus clitellatus* Lepeletier, 1823 (p. 62) is a junior objective synonym and primary homonym of *Nematus clitellatus* Serville, 1823. Lepeletier's work was published in August 1823 and Serville's on 24th May 1823 (Blank & Taeger, 1998, pp. 151–152). Haris (1997, p. 115) designated a lectotype for *Nematus trisignatus* Förster, 1854, treating *trisignatus* as the valid name for a species of *Pachynematus* Konow. The lectotype female in the Zoologische Staatssammlung, Munich, is in good condition: it was examined by Liston in 2006 and determined as belonging to *Pachynematus clitellatus* (Serville). Although Haris (1997) listed the existing labels of the specimens which he designated as lectotypes, thus enabling these to be located, he did not attach a label to either specimen which indicated this designation. Red labels have now been added: 'Lectotype *Epitactus praecox* Förster, 1854 designated A. Haris 1997, according to A. Liston 2009' and 'Lectotype *Nematus trisignatus* Förster, 1854 designated A. Haris 1997, according to A. Liston 2009'.

8. Taeger & Blank (1998, p. 257) noted that *Epitactus* Förster, 1854 is an available name and a senior synonym of *Pachynematus* Konow, 1890, but they deliberately maintained *Pachynematus* as the valid name for the genus pending preparation of an application to the Commission. In the same work (p. 263) they placed *Epitactus praecox* Förster and *Nematus trisignatus* Förster as junior synonyms of *Pachynematus clitellatus* (Serville) after examination of the lectotypes of *Epitactus praecox* and *Nematus trisignatus* and of the holotype of *Nematus clitellatus* Serville in the Museo Regionale di Scienze Naturali, Turin.

9. After 1899, *Epitactus* Förster, 1854 has only once been regarded as a valid genus (Abe & Smith, 1991). However, according to the Principle of Priority (Article 23.1 of the Code) the older name *Epitactus* would have to be applied instead of *Pachynematus* Konow, 1890, whenever the two are considered to be synonyms.

10. Until recently *Pachynematus* Konow, 1890 has been considered to be a large genus, diverse both in morphological characters and host plant associations (see for example Muche, 1974; Taeger et al., 1998). Subsequent taxonomists (e.g. Lacourt, 1999) have tended to remove many species from this apparently polyphyletic assemblage (Nyman et al., 2006) to a number of other more recently described genera. *Pachynematus* in its restricted present sense comprises a group of approximately 30 Holarctic species, some of which are of importance as pests of cereal and grass crops (Chu, 1949; Haris, 1995; Stoltz et al., 1999; Miller & Pike, 2002; Barker & Reynolds, 2004).

11. The name *Pachynematus* is firmly established in publications treating TENTHREDINIDAE in the northern hemisphere and has been used in numerous works on taxonomy, identification and economic entomology, as well as being mentioned in

most regional lists and local faunas (see Taeger et al., 2006 for further references). This name has been applied by more than 10 different authors during the last 10 years, and a representative list of 29 additional references dating from 1978–2006 and demonstrating use of the name *Pachynematus* is held by the Commission Secretariat. Use of the name *Epitactus* instead of *Pachynematus* is likely to cause confusion and to result in nomenclatural instability. Under the provisions of Article 23.9.3, the widely used sawfly generic name *Pachynematus* Konow, 1890 should be conserved by giving it precedence over the very rarely used senior subjective synonym *Epitactus* Förster, 1854, whenever the two are considered to be synonyms.

12. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to give the name *Pachynematus* Konow, 1890 precedence over the name *Epitactus* Förster, 1854, whenever the two are considered to be synonyms;
- (2) to place on the Official List of Generic Names in Zoology the following names:
 - (a) *Pachynematus* Konow, 1890 (gender: masculine), type species by subsequent designation by Schmidt et al. (1998) *Nematus trisignatus* Förster, 1854, with the endorsement that it is to be given precedence over *Epitactus* Förster, 1854, whenever the two are considered to be synonyms;
 - (b) *Epitactus* Förster, 1854 (gender: masculine), type species by monotypy *Epitactus praecox* Förster, 1854, with the endorsement that it is not to be given priority over *Pachynematus* Konow, 1890, whenever the two are considered to be synonyms;
- (3) to place on the Official List of Specific Names in Zoology the following names:
 - (a) *trisignatus* Förster, 1854, as published in the binomen *Nematus trisignatus* (specific name of the type species of *Pachynematus* Konow, 1890);
 - (b) *praecox* Förster, 1854, as published in the binomen *Epitactus praecox* (specific name of the type species of *Epitactus* Förster, 1854).

Acknowledgements

Dr S.M. Blank (*Müncheberg*), Dr A. Taeger (*Müncheberg*) and Dr A.G. Zinovjev (*Boston and St. Petersburg*) are thanked for critical comments on early drafts of the manuscript. Dr Stefan Schmidt enabled me to study Förster's type material in the Zoologische Staatssammlung, Munich.

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Acknowledgement of receipt of this application was published in BZN **64**: 210.

Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to the Executive Secretary, I.C.Z.N., c/o Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).

Case 3507***Phylloporina* Ulrich in Foerste, 1887 (Bryozoa, Fenestrata, Phylloporinina): proposed designation of *Retepora trentonensis* Nicholson, 1875 as the type species**

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Abstract. The purpose of this application, under Article 81.1, is to set aside *Retepora angulata* Hall, 1852 and *Retepora angulata* Hall as applied by Foerste, 1887 as type species of the Palaeozoic bryozoan genus *Phylloporina* Ulrich in Foerste, 1887 and to designate *Retepora trentonensis* Nicholson, 1875 as the type species. Both *R. angulata* and *R. trentonensis* have been cited as type species of the cosmopolitan early Palaeozoic genus *Phylloporina* from 1900 to the present, with *R. trentonensis* being more commonly cited. Morphological details of *R. angulata* Hall, 1852 and *R. angulata* sensu Foerste, 1887 have only recently been determined. They are not consistent with the morphology of species assigned to and described as *Phylloporina*, even by authors who have cited *R. angulata* as the type species, whereas virtually all adequately described *Phylloporina* species appear to be congeneric with *R. trentonensis*. We request that *R. trentonensis* be designated as type species in conformity with the current concept of the genus.

Keywords. Nomenclature; taxonomy; Bryozoa; Phylloporinina; PHYLLOPORINIDAE; *Phylloporina*; *Retepora angulata*; *Retepora trentonensis*; bryozoans; Palaeozoic.

1. In the mid-1880s E.O. Ulrich finished a large manuscript entitled ‘Palaeozoic Bryozoa’, to be published in the eighth and final volume of ‘*Geological Survey of Illinois*’ organised by A.H. Worthen. The Illinois State legislature passed an Act in June 1885 for production of volume 8 within two years (Lindahl, 1890). Ulrich’s new genus *Phylloporina* was among the numerous new taxa to be named in the paper.

2. Ulrich shared information from his manuscript with at least two palaeontologists, A.F. Foerste and S.A. Miller, including information about his intended new genus *Phylloporina*. However, funding for the Survey itself was exiguous and support for publication of the volumes was intermittent, leading to delays of various lengths, as indicated in the transmittal letter for volume 6 of ‘*Geological Survey of Illinois*’ (Kent, 1982, p. 4). Substantial problems plagued the production of volume 8, which did not go to the printer until early 1889, about a year after Worthen’s death, with a further delay of a year and a half before printing was accomplished in 1890 (Lindahl, 1890, p. v).

3. The name *Phylloporina* first appeared in print in a paper by A.F. Foerste as 'Genus PHYLLOPORINA, Ulrich' (Foerste, 1887, p. 150). Only one species, 'Phylloporina angulata, Hall' was mentioned in the paper, which had two entries in the synonymy, both of which were secondary references to *Retepora angulata* Hall, 1852 (p. 49) but both of which were by Hall (Hall & Whitfield, 1875; Hall, 1883). The specimens that Foerste (1887) identified as *Phylloporina angulata* Hall were from the Silurian Clinton Group at 'Soldiers' Home Quarries, Brown's Quarry, Fair Haven, Todd's Fork', [Dayton], Ohio; they were characterised on pages 151 and 152 of the paper. *Retepora angulata* Hall, 1852 (p. 49) as assigned to *Phylloporina* by Foerste (1887, p. 151) is therefore by monotypy the type species of *Phylloporina* according to Article 68.3 of the Code.

4. Foerste (1887) made reference to plates accompanying his paper that were intended to illustrate *Phylloporina angulata* (intended Plates 15 and 17) and other taxa, but the accompanying plates were omitted when his paper was published. Plates 15 and 16 were published the following year (1888, *Bulletin of the Scientific Laboratories of Denison University*, volume 3), but Plate 17 was never published. Unfortunately, the single enigmatic illustration of *P. angulata* on Plate 15 is a generalised drawing of the 'small form for which the name *P. [sic] Daytonensis* was suggested by Hall and Whitfield' (Foerste, 1887, p. 174). Plate 17 was to include drawings of the obverse and reverse sides as well as a tangential section of typical '*P. angulata*' material from Ohio (Foerste, 1887, p. 175), but never appeared.

5. S.A. Miller's '*North American Geology and Palaeontology*' appeared in 1889 and included all of Ulrich's (1890) new bryozoan genera in his listing of taxa, and Ulrich himself listed the combination *Phylloporina trentonensis* (Nicholson) in a paper that appeared a year earlier than his own volume (Ulrich, 1889, p. 47).

6. Ulrich (1890, p. 399) not only listed 'Phylloporina n. gen.' but established 'Family Phylloporinidae n. fam.' based on it when volume 8 finally appeared. In that paper, he designated 'Types: *Phylloporina trentonensis* Nich., and *P. asperato-striata* Hall' (Ulrich, 1890, p. 399), illustrating both species in multiple thin section views. He later (Ulrich, 1895, p. 208) listed only *P. trentonensis* as the type species. Neither species listed by Ulrich (1890) as the 'Types' is the valid type species because the type species had already been fixed as indicated in paragraph 3 above.

7. Several species were listed as *Phylloporina* by Nickles & Bassler (1900), but the only assessment of *Chasmatopora* Eichwald – cited as 1860 rather than the original 1855 paper – was 'This appears to be a *Phylloporina*' (p. 55). A decade later Bassler (1911, p. 169) realised, given the precedence of *Chasmatopora* Eichwald, 1855 (p. 460) that *Phylloporina* needed to be considered as a junior synonym based on the information available. He noted (p. 169), however, that 'As pointed out by Ulrich, several distinct types of structure are included in *Phylloporina*. It is therefore probable that with more study both *Phylloporina* and *Chasmatopora* may be recognized.' Foerste (1919) apparently followed Bassler's acceptance of *Phylloporina* as a junior synonym of *Chasmatopora* and included *Chasmatopora angulata* (Hall, 1852) in a taxonomic list (p. 369), the same species that he had described in 1887 as '*Phylloporina angulata*, Hall'.

8. The first morphologically based characterisation of differences between *Chasmatopora* and *Phylloporina* appears to have been given by Bekker (1921, p. 48): 'In the material that I have at my disposal, may be noticed two types. Seen in transverse

sections one type has the zooecial tubes more or less regularly disposed on one side of the zoarial rounded branch; this type could include all species of the gen. *Chasmatopora*. The other type is with zooecial tubes irregularly disposed throughout the whole branch of zoarium. This type could include the species of the gen. *Phylloporina* Ulrich.' With this statement Bekker succinctly stated the most conspicuous of several differences that separate *Chasmatopora* from subsequently evolving common usage of *Phylloporina*.

9. Between 1921 and 1960 there was instability in use of the names *Chasmatopora* and *Phylloporina*. Bassler (1935), Nekhoroshev (1936) and Shulga-Nesterenko (1955) used *Chasmatopora* as a senior synonym of *Phylloporina*. In other publications *Chasmatopora* was treated as a synonym either of *Subretopora* d'Orbigny, 1849 (Shulga-Nesterenko, 1952, p. 18) or of *Phylloporina* (Toots, 1952, p. 120; Männil, 1958, p. 330). Bassler (1953, p. G116) recognised *Phylloporina* as a valid genus and (p. G117) listed *Chasmatopora* as a synonym of *Subretopora*. There was no discussion of why precedence was given to one name or the other in these papers. The type species of *Subretopora* is *Intricaria ? reticulata* Hall, 1847, unrecognisable from its original description (Hall, 1847, p. 77) and not represented by any type material. It has not been redescribed since an enigmatic description by Ulrich (1895, p. 210) that was not based on original type material. *Subretopora* has been considered an unrecognisable genus since 1890, aside from the two listings cited above and an unelaborated inclusion of the unattributed name *Subretopora fenestrata* in a faunal list (Titus, 1986, p. 820).

10. *Chasmatopora* and *Phylloporina* were treated as different genera within the family PHYLLOPORINIDAE in the bryozoan volume of '*Osnovy paleontologii*' (Shulga-Nesterenko et al. 1960, p. 76). Brief characterisation of the two genera was based on external and internal features of the type species listed in the volume: *Retepora tenella* Eichwald, 1840 (p. 207) for *Chasmatopora* and *Retepora trentonensis* Nicholson, 1875 (p. 37) for *Phylloporina*. In that volume there was no discussion of the history of tangled usage of the names *Subretopora*, *Chasmatopora*, and *Phylloporina*. However, shortly thereafter Nekhoroshev (1961), one of Shulga-Nesterenko's coauthors for '*Osnovy paleontologii*', discussed and gave his opinions on the main points of the history and applied the names *Chasmatopora* and *Phylloporina* to new species consistent with their characterisation in '*Osnovy paleontologii*'.

11. Even before the publication of the bryozoan volume of '*Osnovy paleontologii*' the characterisations given in it had become the foundation for the common understanding of the two genera. Among the numerous species described as *Phylloporina* since 1890, of the 18 that have been characterised sufficiently to consider their taxonomic affinity, all have morphology suggesting close alliance with that of *Retepora trentonensis* Nicholson, 1875 and one additional species has some characteristics allied with *R. trentonensis* and other characteristics allied with *R. tenella* Eichwald, 1840 (McKinney & Wyse Jackson, 2010). Six others are too sketchily characterised to compare.

12. Except for *Intricaria ? reticulata* Hall, 1847, the taxonomy of the species involved has recently been stabilised by redescription and designation of a single name-bearer specimen. Lavrentjeva (1985, p. 43) designated as neotype of *Retepora tenella* Eichwald, 1840 (type species of *Chasmatopora*) Paleontological Institute

(Moscow) specimen 3535/76, from the Vormsi Stage, Upper Ordovician, Palukula, Hiiumaa island, Estonia. McKinney & Wyse Jackson (2010) recognised and re-described as *Chasmatopora foerstei* the material studied by Foerste (1887) and assigned by him to *Phylloporina angulata* (Hall). They designated specimen USNM 84851 (United States National Museum) from the Clinton Group, Niagaran, Silurian, Soldiers' Home Quarries, Dayton, Ohio, U.S.A. as holotype. McKinney & Wyse Jackson (2010) designated as lectotype of *Retepora angulata* Hall American Museum of Natural History (AMNH) specimen 30711, from the Clinton Group, Niagaran, Silurian, Hill's Mill, Wayne County, New York, U.S.A., and questionably assigned the species to *Chasmatopora*. McKinney & Wyse Jackson (2010) designated as neotype of *Retepora trentonensis* Nicholson (Ulrich's intended type species of *Phylloporina*) Natural History Museum, London (NHM) specimen PD5374, from the Trenton Limestone, Trentonian, Ordovician, Belleville, Ontario, Canada.

13. Both *Retepora angulata* Hall (Ross, 1963, 1964; Kopaevich, 1975; Karklins, 1985; Bolton & Cuffey, 2005) and *R. trentonensis* Nicholson (Bassler, 1935, 1953; Männil, 1958; Shulga-Nesterenko et al., 1960; Nekhoroshev, 1961; Dessilly, 1967; Lavrentjeva, 1985; Morozova et al., 2003; Ernst & Carrera, 2008) have been given as type species of *Phylloporina* in taxonomic papers from 1900 forward. The characteristics of *R. angulata* have previously been so poorly known that even those who have given *R. angulata* as the type species consistently have named new species or discussed established species that have affinities with *P. trentonensis* rather than with *P. angulata* (McKinney & Wyse Jackson, 2010).

14. *Chasmatopora* and the prevailing usage of *Phylloporina* are so different from one another that Shulga-Nesterenko (1955, p. 104) discriminated the new subfamily CHASMATOPORINAE, which was recanted by Shulga-Nesterenko et al., 1960 (p. 76). CHASMATOPORINAE was subsequently raised to family level as CHASMATOPORIDAE by Lavrentjeva (1979) as one of two families in the new suborder Phylloporinina Lavrentjeva, 1979.

15. *Retepora angulata* Hall sensu Foerste, 1887 is a species of *Chasmatopora* (*C. foerstei* McKinney & Wyse Jackson, 2010). Its retention as type species of *Phylloporina* Ulrich in Foerste, 1887 would make *Phylloporina* a subjective junior synonym of *Chasmatopora*. *Phylloporina* in the primary sense intended by Ulrich, with *Retepora trentonensis* Nicholson as type species, is a widely recognised genus worldwide and is the taxon on which the family PHYLLOPORINIDAE and the suborder Phylloporinina ultimately are based.

16. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to set aside all previous type species fixations for the nominal genus *Phylloporina* Ulrich in Foerste, 1887 and to designate *Retepora trentonensis* Nicholson, 1875 as the type species;
- (2) to place on the Official List of Generic Names in Zoology the name *Phylloporina* Ulrich in Foerste, 1887 (gender: feminine), type species by designation in (1) above *Retepora trentonensis* Nicholson, 1875;
- (3) to place on the Official List of Specific Names in Zoology the name *trentonensis* Nicholson, 1875, as published in the binomen *Retepora trentonensis* (specific name of the type species of *Phylloporina* Ulrich in Foerste, 1887, as ruled in (1) above).

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Acknowledgement of receipt of this application was published in BZN **66**: 298.

Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to the Executive Secretary, I.C.Z.N., c/o Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).

Case 3502***Coluber nummifer* Reuss, 1834 (currently *Hemorrhois nummifer*; Reptilia, Serpentes): proposed conservation of the specific name**

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Abstract. The purpose of this application, under Article 23.9.3 of the Code, is to conserve the widely used specific name *nummifer* Reuss, 1834 for an eastern Mediterranean colubrine snake originally published within *Coluber* Linnaeus, 1758 and currently referred to the genus *Hemorrhois* Boie, 1826. It is threatened by its putative senior synonym *Coluber tyria* Linnaeus, 1758, which after 1899 has been applied to *Coluber cliffordii* Schlegel, 1837, a taxon considered conspecific with the Saharo-Sindian *Coluber diadema* Schlegel, 1837 belonging to *Spalerosophis* Jan, 1865 (*Spalerosophis diadema* ssp.).

Keywords. Nomenclature; taxonomy; Reptilia; COLUBRIDAE; *Coluber*; *Hemorrhois*; *Spalerosophis*; *Coluber tyria*; *Hemorrhois nummifer*; *Spalerosophis diadema diadema*; *S. diadema cliffordii*; coin snake; diadem snake; eastern Mediterranean; Saharo-Sindian.

1. *Coluber tyria* Linnaeus (1758, p. 224) was established for a colubrine from Egypt ('Habitat in Ægypto') collected by Fredrik Hasselquist. The holotype is lost (Andersson, 1899) and the specific name not mentioned in Hasselquist's (1757) posthumously published 'Iter Palaestinum'. It was used as valid in, for instance, Gmelin (1789), Lacépède (1789), Bonnaterre (1790), Donndorff (1798), Suckow (1798), Bechstein (1801), Sonnini & Latreille (1801), Shaw (1802), Daudin (1803), Oken (1816) and Cuvier (1818); *tyria* was also cited by Merrem (1820) under *Natrix* auctt. (for further citations until 1820 see Schätti et al., 2009b).

2. Geoffroy Saint-Hilaire (1827, pp. 150–151) regarded the description of *Coluber tyria* as too short and deficient to permit a positive identification. Nevertheless, he speculated that with the exception of the number of subcaudals, considered to be rather unimportant, the morphological characters of *C. tyria* agreed perfectly with his 'Couleuvre aux raies parallèles' from Egypt (Geoffroy Saint-Hilaire, 1827, p. 147, pl. 8, fig. 1, in the text also as 'Couleuvre à raies parallèles', later named *Coluber cliffordii* Schlegel, 1837). However, he explicitly used the vernacular name in order to avoid making a possible mistake and replacing a doubt by an error. The specific name *tyria* was not mentioned in herpetological contributions between 1828 and the 1930s

(e.g. Gray, 1831; Schlegel, 1837; Duméril et al., 1854; Günther, 1858), except for two tentative entries in synonymies (Boulenger, 1893; Anderson, 1898) and a few quotations in encyclopaedias (e.g. Drapiez, 1838; Glaire & Walsh, 1846). The alleged citation in Figari (1864) reported by Schätti et al. (2009b) actually refers to *Coluber cahirinus* Gmelin, 1789, a nomen oblitum as declared by these authors.

3. *Coluber diadema* Schlegel (1837, vol. 1, p. 146; vol. 2, p. 148) was described based on Russell's (1807, p. 34, pl. XXX) two specimens of '*Coluber*' (both probably lost) from the vicinity of 'Buchier' (Bushehr or Bushire), Iran, and erroneously reported from the vicinity of Mumbai, India (Schlegel, 1837, vol. 2, p. 148, 'dans les environs de Bombay'). This species, currently referred to the genus *Spalerosophis* Jan, 1865, is distributed from North Africa to Central Asia and probably Northwest India (Schätti et al., 2009a).

4. *Coluber cliffordii* Schlegel, 1837 (vol. 1, p. 148; vol. 2, p. 163; pl. VI, figs. 13–14) from Barbary ('dans les États barbaresques' according to vol. 2) is based on an unknown number of specimens received from Clifford Cocq van Breugel, the Dutch Consul at Tripoli, Libya, which is considered to be the type locality (e.g. Marx, 1959; Kramer & Schnurrenberger, 1963). Mertens (1940) referred to the individual illustrated in the original description as the 'Typus' and this qualifies as a lectotype designation (Article 74.5 of the Code); the specimen's present whereabouts are unknown. Two extant paralectotypes from Tripoli (RMNH 476a-b) are in the herpetological collection of the National Museum of Natural History/Naturalis, Leiden, The Netherlands. Schlegel (1837) cited Geoffroy Saint-Hilaire's (1827, p. 147, pl. 8, fig. 1) 'Couleuvre aux raies parallèles' as an early reference to *C. cliffordii* and listed *C. nummifer* Reuss, 1834 as a senior subjective synonym of the latter.

5. Reuss (1834, p. 135) described *Coluber nummifer* on the basis of a single specimen from Egypt (SMF 18236) in the herpetological collection of the Forschungsinstitut und Naturmuseum Senckenberg in Frankfurt am Main, Germany (Boettger, 1898, no. 7407a; Mertens, 1967). *Coluber nummifer* (currently assigned to *Hemorrhois* Boie, 1826) ranges from the eastern Mediterranean to Central Asia. The name *nummifer* (in combination with *Coluber* auctt. or *Hemorrhois* Boie) has been used as a specific or subspecific name in taxonomic papers, faunistic surveys, conservation reports, identification keys, field guides, zoogeographical analyses, classifications, phylogenies and molecular studies as well as in notes about its distribution, biology, anatomy, physiology and parasites (e.g. Corkill & Cochrane, 1966; Mertens, 1967; Werner, 1971; Andren & Nilson, 1976; Baran, 1976; Başoğlu & Baran, 1980; Schätti & Agasian, 1985; Disi et al., 1988; Gruber, 1989; Leviton et al., 1992; Amr et al., 1994; Böhme & Wiedl, 1994; Schleich et al., 1996; Saleh, 1997; Wallach, 1998; Latifi, 2000; Göçmen et al., 2001; Schätti & Utiger, 2001; Hille et al., 2002; Auliya, 2003; Nagy et al., 2004; Baha El Din, 2006; Sindaco et al., 2006; Franzen et al., 2008; Valakos et al., 2008; Arikan et al., 2009).

6. Terentjev & Chernov (1936, p. 64) believed *Coluber tyria* to be a senior synonym of *C. diadema* Schlegel. The name *tyria* has since been in common use in the herpetological literature of the former USSR (e.g. Terentjev & Chernov, 1949; Chernov, 1959; Bogdanov, 1960, 1962; Vasiljev et al., 1960; Terentjev, 1961; Drosdov, 1967; Shammakov, 1971; Jadgarov, 1972; Said-Alijev, 1973; Shukurov, 1973; Atajev, 1974, 1975a-b; Tsellarius, 1975; Said-Alijev, 1979). It should be emphasised that this practice was entirely limited to this country; elsewhere, except

for early references (see para. 2), *C. tyria* has never been used as a valid name for any snake species. Mertens (1940) noted that Linnaeus's (1758) description of *tyria* better fitted *C. ravergeri nummifer* than *Spalerosophis diadema*. However, in the absence of the holotype, Mertens (1940) and Dundee (1994) considered the identity of *C. tyria* uncertain, and the former chose to reject this name. Although Lanza (1964) concurred with the opinion of the authors from countries of the former USSR, he proposed to suppress *tyria* for the sake of taxonomic stability. The name *tyria* was finally abandoned by herpetologists but continued to appear sporadically in ecological and physiological papers until recently (e.g. Lioubimtseva, 2002; Kazakov et al., 2003, 2004).

7. Most herpetologists (e.g. Terentjev & Chernov, 1936, 1949; Chernov, 1959; Marx, 1959; Baig & Masroor, 2008; Schätti et al., 2009b) considered *Coluber cliffordii* as a subspecies of *C. diadema*. These names are simultaneous synonyms and Marx (1959, p. 350), acting as the First Reviser, gave precedence to *diadema*. However, Schmidt (1939) and a few subsequent authors (e.g. Khalaf, 1960; Latifi, 1991; Trape & Mané, 2006) treated *cliffordii* as a distinct species. Marx (1959) distinguished *cliffordii* from *diadema* by the number of subcaudals but Lanza (1964) observed that the lectotype of *diadema* figured by Russell (1807) had a count that would render illusory the morphological separation of *diadema* from *cliffordii* sensu Marx (1959).

8. '[B]ased on the description provided and on Lacepède's [sic] (1789: p. 86, 264) statement that the species occurs in Egypt', Smith & David (1999) concluded that *Coluber tyria* was a senior subjective synonym of *Coluber nummifer* Reuss, 1834 (these authors quoted Reuss's name in parentheses and attributed *Coluber tyria* to Linnaeus, 1766). Their synonymy was supported by Schätti et al. (2009b). However, Smith & David's (1999) rationale that Linnaeus's name should be regarded as a nomen oblitum, and *C. nummifer* as a nomen protectum in that context is not correct because the condition to be declared a nomen oblitum as stipulated in Article 23.9.1.1 of the Code (i.e. not used as valid after 1899) is not met. *C. tyria* has been used as valid after 1899, though for a different species (see para. 6).

9. Although the conservation of Linnaean names certainly provides stability of nomenclature, replacing the well-established specific name *nummifer* Reuss by its senior subjective synonym *tyria* Linnaeus would result in enormous confusion in various fields of empirical and applied biology, the more so as *Coluber tyria* was temporarily used for *Spalerosophis diadema* (see para. 6), while *C. nummifer* has universally been considered to be the valid scientific name of the coin snake, except for confusions with *Coluber ravergeri* Ménétriés, 1832 (p. 69).

10. In an attempt to conserve *C. tyria*, an alternative approach to our petition (para. 11) was proposed during the review process of this application. It consists of a reversion to the former standard practice in the USSR, when *tyria* was used in place of its putative junior synonym *diadema* (see para. 6), i.e. by making the former a senior subjective synonym of the latter. Since *tyria* as originally proposed is not considered to be conspecific with *diadema*, the designation of a neotype for *C. tyria* from among geographically relevant specimens of *C. diadema* would require action by the Commission using the plenary power, under Article 75.6 of the Code, to avoid the violation of Article 75.3.5. This proposal suggesting the conservation of the name *nummifer* by changing the identity of *tyria*, seems undesirable. The designation of a neotype for *C. tyria* would entail a precarious situation due to the as yet unresolved

taxonomic status of *C. cliffordii*, which may be specifically distinct from *diadema* (see para. 7), and uncertain origin of the type series of *diadema*, based in particular on conflicting morphological data (Schmidt, 1955) of diadem snakes from the vicinity of Bushehr, the supposed type locality of *diadema*. Although we are convinced that *Coluber tyria* is a senior subjective synonym of *C. nummifer*, the absence of a name-bearing type makes an unequivocal assessment of the identity of *C. tyria* impossible and future opinions advocating an alleged status as a senior synonym of *C. cliffordii* cannot be excluded. If *cliffordii* were found to be specifically distinct from *diadema*, the designation of a neotype for *C. tyria* would lead to further confusion.

11. We prefer the suppression of *C. tyria* as proposed by Mertens (1940) and Lanza (1964) instead of asking precedence over this name for *C. nummifer* and the potential junior synonyms *C. diadema* and *C. cliffordii*. Even though *C. tyria* has been used as valid up to the present time and, therefore, one of the two conditions for the reversal of precedence (Article 23.9.1.1 of the Code) is not met, this name has never been applied to the coin snake, for which *C. nummifer* has been used as valid in many works, including all works in the preceding 50 years (see list in para. 5), thereby fulfilling the conditions of Article 23.9.1.2 of the Code.

12. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to suppress the specific name *tyria* Linnaeus, 1758, as published in the binomen *Coluber tyria*, for the purposes of the Principle of Priority, but not for those of the Principle of Homonymy;
- (2) to place on the Official List of Specific Names in Zoology the name *nummifer* Reuss, 1834, as published in the binomen *Coluber nummifer*;
- (3) to place on the Official Index of Rejected and Invalid Specific Names in Zoology the name *tyria* Linnaeus, 1758, as published in the binomen *Coluber tyria* and as suppressed in (1) above.

Acknowledgements

Van Wallach (*Museum of Comparative Zoology, Cambridge (Harvard University), U.S.A.*) scrutinised a draft of this petition and made valuable comments. Mirko Barts (*Kleinmachnow, Germany*) and Christoph Kucharzewski (*Berlin, Germany*) provided literature.

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Acknowledgement of receipt of this application was published in BZN **66**: 204.

Comments on this case are invited for publication (subject to editing) in the Bulletin; they should be sent to the Executive Secretary, I.C.Z.N., c/o Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).

Case 3506***Allosaurus* Marsh, 1877 (Dinosauria, Theropoda): proposed conservation of usage by designation of a neotype for its type species *Allosaurus fragilis* Marsh, 1877**

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Abstract. The purpose of this application, under Article 75.5 of the Code, is to conserve the usage of the name *Allosaurus* Marsh, 1877 by replacement of the fragmentary and nondiagnostic holotype of *Allosaurus fragilis* Marsh, 1877 with a diagnostic skull and skeleton from the same quarry. The name of the genus *Allosaurus*, whose type species is *A. fragilis*, is widely accepted by palaeontologists and has been familiar to the public for decades and it is essential that an adequate type be available. It is proposed that all type species fixations for the genus *Allosaurus* be set aside and a neotype be designated.

Keywords. Nomenclature; taxonomy; Dinosauria; Theropoda; *Allosaurus*; *Allosaurus fragilis*; dinosaur; Jurassic; North America; Europe.

1. Marsh (1877) described the genus *Allosaurus* and its type species *A. fragilis* Marsh, 1877 (p. 515). The holotype of *A. fragilis* consists of a tooth, two dorsal centra, and a proximal phalanx of right pedal digit III which appear to represent the same individual from the lower Morrison Formation at Garden Park, Fremont County, central Colorado. The holotype is deposited in the Peabody Museum of Natural History, and bears reference number YPM 1930.

2. The genus *Allosaurus* is widely cited and utilised in the technical literature, stands as an exemplar of the large predaceous dinosaurs of the Late Jurassic, especially the archetypal Morrison Formation, and has become an iconic dinosaur name, about as well known to the public as *Iguanodon*, *Triceratops*, *Stegosaurus* and *Coelophysis*.

3. The Morrison Formation extends from Canada to New Mexico, and was deposited over a span of approximately 8 million years from the Oxfordian to the Tithonian (Trujillo et al., 2006; Carpenter & Wilson, 2008). *Allosaurus* has also been found in broadly contemporary deposits of the same age in Europe, at that time an archipelago off the east coast of North America (Mateus et al., 2006). The large number of specimens assigned to *Allosaurus* exhibit considerable diversity in morphology and may actually represent more than one taxon (Paul, 1988; Mateus

et al., 2006). The probability that this theropod genus consisted of a number of species preserved as a large and variable set of remains over a wide span of time and geographical area reinforces the requirement that the type species be based on a high quality specimen that provides the foundation for a detailed diagnosis.

4. Because a tooth, a pair of dorsals and a toe element are inadequate to diagnose a genus, much less a species, YPM 1930 can only be identified to family level. The same problem afflicts all specimens that potentially represent the same late Jurassic allosaurid genus from western North America. From the same Quarry 1 as YPM 1930, *Labrosaurus ferox* Marsh, 1884 (p. 333) is another nomen dubium because the holotype USNM 2315 is a peculiar dentary with apparent pathologies that further obscure its generic and specific status. Specimen YPM 1931, the holotype of *Allosaurus lucaris* Marsh, 1878 (Marsh, 1878, p. 242) from the middle Morrison Formation of southern Wyoming, consists of some presacral vertebrae and pectoral and forelimb elements. It is significantly younger than YPM 1930, probably represents a different species from YPM 1930, and may or may not belong to the same genus. It is not sufficiently complete to characterise a species. The name *Allosaurus lucaris* is therefore also a nomen dubium. *Antrodemus* Leidy, 1870, type species *Poicilopleuron valens* Leidy, 1870 (p. 4) is based on holotype USNM 218 (posterior half of the centrum of a proximal caudal) from northern Colorado. Because USNM 218 is entirely inadequate as a holotype in terms of quality and provenance, *Antrodemus* is a nomen dubium (Madsen, 1976; Paul, 1988; Glut, 1997; Holtz et al., 2004), and is no longer used by current researchers. *Epanterias amplexus* Cope, 1878 (Cope, 1878a, p. 406) comes from the much younger upper Morrison Formation at Garden Park, and is probably a different taxon from YPM 1930. It is a nomen dubium because holotype AMNH 5767, consisting of a few vertebrae, a pectoral element and a limb bone, is insufficiently diagnostic. Also unsatisfactorily diagnostic is the holotype of *Creosaurus atrox* Marsh, 1878 (Marsh, 1878a, p. 243), YPM 1890 from the middle Morrison Formation of southern Wyoming. It consists of two skull elements, two sacrals, and a few pelvic and limb elements, and is a nomen dubium. *Hypsirophis discursus* Cope, 1878 (Cope, 1878b, p. 389), is a nomen dubium because the holotype AMNH 5731 is a neural spine. The holotype of *Allosaurus europaeus* Mateus, Walon & Antunes, 2006 (p. 128), ML 415, is the posterior half of a skull. Although marginally diagnostic, ML 415 may or may not belong to the same genus and species as, and be contemporary with YPM 1930, and the two individuals lived some 4000 km apart. All of the above taxa and type specimens are large allosaurid remains, all far too incomplete to be determinate, but broadly contemporary with, and potential synonyms of *A. fragilis* which itself is based on non-diagnostic remains.

5. The genus *Allosaurus* continues to be in use despite the absence of an adequate type specimen for its type species because *Allosaurus fragilis* is tacitly diagnosed on the basis of two nearly complete and well described skulls and skeletons: USNM 4734 (Gilmore, 1920) is from the same Garden Park quarry as YPM 1930 (Evanoff & Carpenter, 1998); it was erroneously referred to as a paratype of *A. fragilis* by Madsen (1976, p. 10). Madsen's (1976, p. 10) neotype designation of the even more complete DINO 2560 (National Monument Collection, formerly UVP 6000 (University of Utah Vertebrate Paleontology)) is invalid as the original type material is extant (Article 75.1 of the Code), and does not comply with Article 75.3.6 of the

Code. The long-skulled DINO 2560 comes from the middle Morrison Formation of northeastern Utah, and its younger age and anatomical differences suggest that it is probably a different taxon from YPM 1930 and short-skulled USNM 4734. With *Allosaurus* remaining unstable, it is technically reasonable for a researcher to apply a new genus and species name to any of a number of diagnostic specimens, including USNM 4734 and DINO 2560 that are potentially assignable to the genus *Allosaurus*. Because the taxonomic identity of the nominal species *Allosaurus fragilis* cannot be determined from its existing name-bearing type, and stability and universality are threatened thereby, we request the Commission to set aside under its plenary power the existing name-bearing type and designate specimen USNM 4734 as neotype.

6. Designation of USNM 4734 as the neotype of *Allosaurus fragilis* will ensure the permanent stability of the genus. This neotype choice complies with Article 75.3.6 of the Code by being from the original type locality and geological horizon. The probability that the well-preserved USNM 4734 represents the same genus and species as YPM 1930 is high because they were collected from the same quarry, minimising issues of temporal and geographic distance between holotype and neotype.

7. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to set aside all previous type fixations for the nominal species *Allosaurus fragilis* Marsh, 1877 and to designate specimen USNM 4734 in the United States National Museum, Smithsonian Institute, Washington DC as the neotype;
- (2) to place on the Official List of Generic Names in Zoology the name *Allosaurus* Marsh, 1877 (genus: masculine), type species by monotypy *Allosaurus fragilis* Marsh, 1877;
- (3) to place on the Official List of Specific Names in Zoology the name *fragilis* Marsh, 1877, as published in the binomen *Allosaurus fragilis* and as defined by the neotype designated in (1) above.

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Acknowledgement of receipt of this application was published in BZN **66**: 298.

Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to the Executive Secretary, I.C.Z.N., c/o Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).

Case 3500

***Paradisaea* Linnaeus, 1758 and PARADISAEIDAE Swainson, 1825 (Aves): proposed conservation of usage**

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Abstract. The purpose of this application, under Article 81.1 of the Code, is to conserve the generic name *Paradisaea* Linnaeus, 1758 and the family name PARADISAEIDAE Swainson, 1825 for the birds of paradise. These names in these spellings have been in prevailing use for over 75 years. Suppression of the competing spellings *Paradisea* Linnaeus, 1758 and, as a consequence, PARADISEIDAE Swainson, 1825, will maintain stability in nomenclature.

Keywords. Nomenclature; taxonomy; Aves; PARADISAEIDAE; *Paradisaea*; *Paradisea*; birds of paradise; Australasia; New Guinea.

1. The generic name *Paradisaea* Linnaeus, 1758 and the family name PARADISAEIDAE Swainson, 1825 are the accustomed spellings of these names for members of one of the best-known and most charismatic groups of birds in the world, the birds of paradise. When establishing the generic name, Linnaeus (1758, p. 110) applied it in that spelling to two species of birds of paradise: *Paradisaea apoda* Linnaeus, 1758 (p. 110) (type species of *Paradisaea* by subsequent designation of G.R. Gray (1840, p. 39)) and *Paradisaea regia* Linnaeus, 1758 (p. 110). On page 83 of the same work, however, in a list of the generic characters, he spelled the name *Paradisea*. In 1760, Linnaeus (1760, pp. 83, 110) again repeated the two spellings as valid for the genus and again without preference, but in 1766 he used only the spelling *Paradisea* (Linnaeus, 1766, pp. 54, 166). No one else, in the meantime, had made any selection.

2. David et al. (2009, p. 4) pointed out that this was a case in which Linnaeus became his own First Reviser under Article 24.2.4 of the Code; they concluded, given the retroactive nature of this provision introduced in the Fourth Edition of the Code, that *Paradisea* and PARADISEIDAE were the correct original spellings. *Paradisea* in that spelling was used widely in the 19th century (e.g. Elliot, 1873; Sharpe, 1877;

Salvadori, 1881; Sharpe, 1891–1898; Rothschild, 1898; Sharpe, 1903), where it was referred back to the starting date of Linnaeus (1766) under the Stricklandian Code (Strickland, 1843). But it fell into disuse early in the 20th century because of the lead given by Stresemann (1913, 1914, 1923, 1930, and particularly 1927–1934). Assiduously following the recently instituted *Règles* of 1905 (Congrès Internationaux de Zoologie, 1905), Stresemann used *Paradisaea* and the associated family name, PARADISAEIDAE, now referred back to the older starting date of Linnaeus (1758).

3. These latter spellings have now been adopted almost universally in the post 1920 scientific literature and leading ornithological manuals and checklists, as follows:

(a) Global checklists and nomenclators: Stresemann (1927–1934), Mayr & Amadon (1951), Wetmore (1960), Mayr (1962), Warren & Harrison (1971), Wolters (1977), Walters (1980), Edwards (1986), Sibley & Ahlquist (1990), Sibley & Monroe (1990), Howard & Moore (1991), Monroe & Sibley (1993), Commission Internationale des Noms Français des Oiseaux (1993), Bock (1994), Wells (1998), Dickinson (2003), Peters et al. (2004), Gill & Wright (2006), McCarthy (2006), Clements (2007);

(b) Regional works, checklists and handbooks: Stresemann (1923), Mathews (1930), Mayr (1941), Rand & Gilliard (1967), Diamond (1972), Majnep & Bulmer (1977), Beehler & Finch (1985), Coates (1990), Schodde & Mason (1999), Steinheimer (2005), Gregory (2008), Christidis & Boles (2008);

(c) Field guides: Beehler et al. (1986), Coates in collaboration with Peckover (2001), Strange (2001);

(d) Family monographs: Gilliard (1969), Cooper & Forshaw (1977), Cracraft (1992), Frith & Beehler (1998);

(e) Treatises on evolution, speciation and behaviour in the family PARADISAEIDAE: Stresemann (1930), LeCroy (1981), Bateson (1983), Walters (1988), Andersson (1994), Johnsgard (1994), Ligon (1999), Barker et al. (2004);

(f) Historical works, manuals, and popular texts: Peckover & Filewood (1976), Van Tyne & Berger (1976), Campbell & Lack (1985), Welty & Baptista (1988), Swadling (1996) and Gill (2007).

Moreover, the family PARADISAEIDAE extends from New Guinea to Australia and to islands as far west of New Guinea as Obi and Halmahera, Indonesia. It comprises species of world-wide conservation concern and appears with the ‘ae’ spelling in such important conservation management references as: Collar et al. (1994), Stattersfield et al. (1998), Supriatna (1999), BirdLife International (2000) and CITES (2009).

4. To our knowledge, only the minor works of Iredale (1948, 1950, 1956) and McAlpine (1979) have employed *Paradisea* since the 1920s; but it has been used in the 20th century nonetheless. If the in-use spelling *Paradisaea* is to be kept, the only recourse appears to be an action by the International Commission on Zoological Nomenclature under its plenary power (Article 81.1 of the Code) that would rule *Paradisaea* Linnaeus, 1758 to be the correct original spelling. Articles 33.2.3.1 and 33.3.1 of the Code cannot be used to conserve it because they concern emendations and subsequent spellings, not alternative original spellings, which *Paradisaea* and *Paradisea* are.

5. Under Article 29.5 of the Code, the spelling PARADISAEIDAE, despite not being formed from *Paradisea* according to the grammatical procedures of Articles 29.3.1 and 29.3.2, is to be maintained as prevailing usage. In such circumstances, conserving *Paradisaea* Linnaeus, 1758 becomes even more conducive to stability because

otherwise the the presently correct original spellings *Paradisea* Linnaeus, 1758 and PARADISAEIDAE will conflict with one another and create confusion. If, moreover, the Commission takes action to conserve *Paradisaea*, the spelling of PARADISAEIDAE will become the correct spelling under Articles 11.7.1, 29.1, 29.3 and 35.4 of the Code, the same as that in prevailing use. In either case, no ruling by the Commission is needed to protect the in-use spelling of the family name; yet we believe that stability would benefit if the name PARADISAEIDAE in that spelling were placed on the Official List.

6. The authority for the family name PARADISAEIDAE is not Vigors (1825), as conventionally attributed (e.g. Bock, 1994, p. 158). The author instead is Swainson (1825). Constrained by the Quinary system, Vigors (l.c., pp. 448–449, 465) had no place for the ‘*Paradisaeae*’ as a family in either of the tribes (= suborders) Conirostres or Tenuirostres to which he referred the birds of paradise. His contemporary William Swainson (1825) nevertheless included the PARADISAEIDAE as valid in the Tenuirostres, naming the family as PARADISEIDAE on p. 480 and making it available by indication (Articles 11.7.1.1 and 12.2.4 of the Code) on p. 479 by basing it on ‘*Paradisea*, Linn.’ in a footnote.

7. Because the spellings *Paradisaea* and PARADISAEIDAE are overwhelmingly in prevailing use today, and because of the confusion that will result from switching between such similarly-spelled names as *Paradisaea* and *Paradisea*, we believe it appropriate for the International Commission on Zoological Nomenclature to use its plenary power under Article 81.1 of the Code to establish the spellings *Paradisaea* and PARADISAEIDAE firmly.

8. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to suppress all previous First Reviser Acts affecting the spellings *Paradisea* Linnaeus, 1758 and *Paradisaea* Linnaeus, 1758, and to rule that *Paradisaea* Linnaeus, 1758 is the correct original spelling of the name;
- (2) to place on the Official List of Generic Names in Zoology the name *Paradisaea* Linnaeus, 1758 (gender: feminine), type species *Paradisaea apoda* Linnaeus, 1758 by subsequent designation by G.R. Gray (1840), ruled in (1) above to be the correct original spelling;
- (3) to place on the Official List of Specific Names in Zoology the name *apoda* Linnaeus, 1758, as published in the binomen *Paradisaea apoda* (specific name of the type species of *Paradisaea* Linnaeus, 1758);
- (4) to place on the Official List of Family-Group Names in Zoology the name PARADISAEIDAE Swainson, 1825, type genus *Paradisaea* Linnaeus, 1758;
- (5) to place on the Official Index of Rejected and Invalid Generic Names in Zoology the name *Paradisea* Linnaeus, 1758, an incorrect original spelling as per the ruling in (1) above;
- (6) to place on the Official Index of Rejected and Invalid Family-Group Names in Zoology the name PARADISEIDAE Swainson, 1825, an incorrect spelling of PARADISAEIDAE Swainson, 1825.

Acknowledgements

We would like to express our special gratitude to Thomas Baione, of the library of the American Museum of Natural History, for his untiring assistance in literature

searches for this application. The application has been reviewed and approved by the Standing Committee on Ornithological Nomenclature of the International Ornithological Committee.

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Acknowledgement of receipt of this application was published in BZN **66**: 204.

Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to the Executive Secretary, I.C.Z.N., c/o Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).

Comments on *Palaemon rosenbergii* De Man, 1879 (currently *Macrobrachium rosenbergii*; Crustacea, Decapoda): proposed conservation of usage by designation of a neotype

(Case 3428; see BNZ 65: 288–293; 66: 340–341)

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I fully support the application to conserve the name *Macrobrachium rosenbergii* for the commercially farmed freshwater prawn species we all know as *Macrobrachium rosenbergii dacqueti* (or *Macrobrachium dacqueti*) as proposed by Dr Daisy Wowor and Prof. Peter Ng. Keeping the name as such would avoid unnecessary confusion especially among aquaculture scientists and industry practitioners who have known the species as *M. rosenbergii* from scientific and popular publications. I together with other colleagues at SEAFDEC/AQD have been working on this commercial species as well as the other native Philippine species (proposed as *Macrobrachium wallacei*) to date and would like to be certain of the standard scientific names as we write about our research results in scientific publications.

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I hereby support Case 3428 to conserve the usage of the specific name of *Macrobrachium rosenbergii* (De Man, 1879) for all the reasons raised by the authors Daisy Wowor and Peter Ng.

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I am writing to express my support for the evidence as laid out in Case 3428 as well as the comments.

Comment on the proposed conservation of *Papilio danae* Fabricius, 1775 (currently *Colotis danae*; Insecta, Lepidoptera, PIERIDAE)
(Case 3488; see BZN 66: 250–255)

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This seems to me to be an open and shut case. The stability of nomenclature of a widespread, well-known and widely studied butterfly is jeopardised by the resurrection of an almost completely forgotten name that originally happened to be placed in the same catch-all genus, and that is itself generally considered to be a junior synonym of a species now placed in a different family. The chance of the two names being confused is remote. The authors make their case for the suppression of the senior name, and the conservation of the junior, carefully, logically and lucidly. I strongly support it.

The case raises a wider issue. It is this over zealous application of the rules, however well meant, that causes unnecessary changes to well-established names and threatens to bring those rules and formal taxonomy itself into disrepute among the many biologists that undertake taxonomy, but who are not steeped in the culture of the Code. If these biologists lose faith in the rules of nomenclature and start ignoring them, confusion is bound to follow. In my opinion, in the case of these ancient and temporary homonymies, stability of nomenclature should take precedence over the strict application of priority. In the present case, and I would guess most others, the two nominal taxa shared a common generic placement for a few decades until each was transferred to another, separate genus in a different family.

Clearly, when earlier names or usages are discovered, they should be reported, but the assumption should be that the stability of current nomenclature should be maintained. The rules may need to be changed so that only in cases of genuine confusion – a vanishingly small number, I should guess – would a case need to be made to the Commission to request the formal suppression or conservation of once homonymous names.

Comments on *Raja say* Le Sueur, 1817 (currently *Dasyatis say*; Chondrichthyes, Myliobatiformes, DASYATIDAE): proposed change of spelling to *Raja sayi* Le Sueur, 1817

(Case 3410; see BZN 65: 119–123).

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We, the members of the American Fisheries Society and American Society of Ichthyologists and Herpetologists joint Committee on Names of Fishes, write in opposition to pending Case 3410. The Bluntnose Stingray, *Dasyatis say* (Lesueur,

1817), is a widely distributed myliobatiform chondrichthyan occurring in the western Atlantic from the coast of the northern United States (Massachusetts) south to northern Argentina. The spelling of the specific name, *Raja say* Lesueur, 1817, is fully justified and in compliance with Article 31.1 of the present Code. The species was listed in three editions of *Common and Scientific Names of Fishes from the United States and Canada* (1960, 1970, 1980, American Fisheries Society Special Publications 2, 6, 12) as *Dasyatis sayi*. However, in the 5th edition (1991, Special Publication 20) the spelling was changed to *Dasyatis say* to conform to the original spelling as outlined in the 3rd Edition of the Code (1985; Article 31a). This spelling was also used in the 6th Edition (2004) of *Common and Scientific Names of Fishes from the United States, Canada and Mexico* and will again be used in the forthcoming 7th Edition (in preparation). In addition, at least ten other North American species of fishes have specific names formed as a noun in apposition (e.g. *Galeocerdo cuvier*, *Lophotus lacepede*, *Gobiosoma bosc*, etc.). These names are in prevailing usage and have been firmly entrenched in the North American ichthyological literature.

In our opinion, the original spelling has been the prevailing usage in North America for the last 18 years. Hence, we find Case 3410 to be counterproductive to Article 31.1 as well as to the spirit of the Code. We strongly favour retention of the original spelling following Article 31.1 and support prevailing usage. The continued use of the original spelling is in the best interest of stability and future uniformity.

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We have always been mildly irritated by the correct original spelling of *Raja say* and the confusion that the formation of the specific epithet generated, but we saw no justification for correcting it. However, since Santos and Carvalho (BZN 65: 119–123) have initiated this process we wish to support their petition.

Unfortunately, we cannot completely agree with their argument that *Dasyatis sayi* is the spelling in prevailing usage in terms of Article 33.2.3.1. The scientific literature contains many uses of *D. sayi* but also a number of uses of *D. say*. The *D. sayi* spelling predominated for many years in the scientific and particularly in the popular literature, but *D. say* was also in use. We do not expect that this will be sufficient to be considered prevailing usage however broadly that may be defined in the Code. The correct original spelling ‘say’ has generated numerous subsequent emendations to ‘sayi’ in the scientific and popular literature by well-meaning authors, who just assumed a taxonomist would have formed the name properly (Article 31.1.2; Recommendation 31A). Even if the Commission votes to uphold the original spelling, the confusion will continue. The only way to avoid confusion in this case is to emend the spelling ‘say’ to ‘sayi’.

**Comment on the proposed conservation of *Pseudobagrus* Bleeker, 1858
(Osteichthyes, BAGRIDAE)
(Case 3455; see BZN 65: 202–204)**

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We are writing to comment on the petition of López et al. for the Commission to use its plenary power to suppress the siluriform generic name *Tachysurus* La Cepède 1803. The petition results from our publication clarifying the identity of *Tachysurus* (Ng & Kottelat, 2007). The consequences of our neotype designation, as described by López et al., are not new since we detailed all.

It has been more than a year since this application was published and we had hoped that this case would be important enough to elicit comments. The fact that no one has written to support or oppose the petition can be seen as an indication of the (un)importance of the case. Since no comments have been forthcoming, we explain below why we do not see the use of *Tachysurus* instead of *Pseudobagrus* as a threat to stability of nomenclature. Once considered in the context of nomenclature of Asian freshwater fishes, the changes are much less dramatic than suggested by López et al.

La Cepède (1803) described *Tachysurus sinensis* from a Chinese painting. The generic name *Tachysurus* remained unused until Eigenmann & Eigenmann (1888) first applied it to the predominantly marine catfishes of the family ARIIDAE. *Tachysurus* was used for members of the ARIIDAE for about 30 years (as a senior subjective synonym of *Arius* Valenciennes, 1840) until Jordan (1923) raised the possibility that *T. sinensis* could refer to a freshwater catfish and not an ariid. Since then, the usage of *Tachysurus* for members of the ARIIDAE has been more sporadic, with both *Arius* (e.g. Inger & Chin, 1962) and *Tachysurus* (e.g. Smith, 1945) being used. Wheeler & Baddokwaya (1981) presented evidence that *T. sinensis* was not a member of the ARIIDAE; since then the usage of *Tachysurus* for ariids has sharply decreased and is now restricted to non-taxonomic literature (see below).

Referring to Wheeler & Baddokwaya (1981), López et al. (BZN 65: 202–204) commented that ‘the identity of *Tachysurus* remained ambiguous as an undetermined siluriform’ until our designation of a neotype for *T. sinensis* (in passing, admitting that we solved the problem). This is not exactly the case. Wheeler & Baddokwaya (1981) addressed only the problem of whether *T. sinensis* was an ariid or not, and having concluded that it was not, they did not bother to explore its actual identity. With experience of the East Asian Siluriformes, they would have realised that the figured fish can only belong to the Bagridae.

That *T. sinensis* was not recognised as a bagrid for a long period was probably largely due to the lack of access to the figure in the original description. The figure (reproduced by Wheeler & Baddokwaya, 1981), shows several features (e.g. color

pattern) clearly attributable to the bagrid catfish genus then recognised as *Pseudobagrus*. Anyway, the name *T. sinensis* remained in limbo, variously listed as nomen dubium or incertae sedis. Nomina dubia and incertae sedes are not meant to be permanent statuses: their fate is to become valid or invalid. They remain potential threats for younger valid names and for the sake of stability their identity must be resolved, the sooner the better. In that aspect *Tachysurus* is a good example. Had the identity of *T. sinensis* been clarified in 1923, it would quickly have reached general usage. Nobody tried to resolve the taxonomic and nomenclatural status of *T. sinensis* until our addressing the problem and solving it by a neotype designation (Ng & Kottelat, 2007).

The general misapplication of the name has stopped since Wheeler & Baddokwaya's (1981) identification of *T. sinensis* as a catfish not of the family ARIIDAE. Although the name *Tachysurus* is still occasionally and mistakenly applied to members of the ARIIDAE, a search of the Zoological Records Online (conducted on 3 August 2009) for the period 1981–2009 revealed that *Tachysurus* has been used for members of the ARIIDAE only ten times within the last ten years, and always by fisheries scientists or parasitologists from one country (India). Fisheries literature notoriously may ignore taxonomic and nomenclatural changes for dozens of years. Should ill will, lack of information or incompetence be used as a standard to decide on validity of names? Given the small number of incidences and its restriction to users from a single country, we feel that this is unlikely to lead to widespread confusion should *Tachysurus* remain in use for East Asian bagrid catfishes.

The present generic nomenclature within the Bagridae dates from Jayaram (1968), who organised East Asian bagrids in five genera (*Bagroides*, *Coreobagrus*, *Leiocassis*, *Pelteobagrus*, and *Pseudobagrus*). Mo (1991) showed that the East Asian species that Jayaram assigned to *Bagroides* and *Leiocassis* were not congeneric with those from Southeast Asia and Mo assigned them to either *Pelteobagrus* or *Pseudobagrus*. However, Chinese authors still persist in using *Leiocassis* for some East Asian species (e.g. Zheng & Dai, 1999; Yu et al., 2009). The assignments of some species keep shifting between *Pseudobagrus*, *Pelteobagrus* and *Leiocassis*. The notion of a stable *Pseudobagrus* as presented by López et al. became so only when Ng & Freyhof (2007) placed all of the East Asian taxa into a single genus (*Pseudobagrus*), citing previously published morphological and molecular evidence. These facts greatly weaken the argument that conservation of *Pseudobagrus* would save us from 'taxonomic confusion'.

López et al. contend that the usage of *Pseudobagrus* for the East Asian members of the Bagridae is widespread, and cite usage in at least 135 papers in 50 years as an example. This approximates to three papers a year, a very low rate for a genus within a 'group that . . . includes species of commercial significance' and with a large body of literature. The proposal by López et al. compares unfavorably with the change of both the generic and specific names of the rainbow trout from *Salmo gairdneri* to *Oncorhynchus mykiss*, which did not cause any significant problem to users and became established very quickly. The usage of the binomen for the rainbow trout is considerably more extensive, being cited each year in thousands of scientific, technical, commercial and popular publications, and mentioned in national and international legal instruments. The species is the object of a trade worth billions of dollars annually.

The list of 135 references that López et al. provide includes many publications in Chinese journals, giving the impression of a common usage of the name *Pseudobagrus*. The reality is somewhat different. Our experience with Chinese journals is that binomens are used only in the title, introduction, and/or abstract (and sometimes in tables and figure/table captions; the latter case only occurs when there are English translations of the captions) and it is the Chinese name for the species that is used throughout the text. It was not possible for us to verify if this is true for all of the non-taxonomic papers in the listed Chinese journals simply because we could not access them, but it is confirmed in those we could obtain. Also, we do not have the luxury of investing days in what we consider a sterile diversion from more important taxonomic research; we do understand, however, that others may not share our priorities.

As explained in our paper (Ng & Kottelat, 2007), we have been aware of the nomenclatural problems surrounding *Tachysurus* for a long time. That the problem has been mentioned in publications published between Wheeler & Baddokwaya's (1981) study and our neotype designation (e.g. Kailola, 2004) indicates that other ichthyologists are also aware of it. The resolution of the identity of *T. sinensis* was made necessary by a checklist of freshwater fishes of southeastern Asia being prepared by one of us (MK). This led to the discovery of (and need to make decisions on) about 25 cases of genera of uncertain identity and/or presenting priority conflicts leading to name changes. It was recognised that most of these name changes would be annoying but could be avoided only by applications to the Commission. That so many nomenclatural problems subsist at the genus level, even in taxonomic literature, indicates how far we are from a stable nomenclature in the covered group and area. Besides, these are changes for strictly nomenclatural reasons, not reflecting taxonomic problems; we expect that many more changes at genus level will result from future taxonomic research. It was decided that submitting about 25 applications (about equal to the number of applications published in the 2009 volume of BZN!) would make less sense than submitting applications only for cases of great complexity or ones in which family group names were involved. (e.g. the *Mystus* case, which would have meant changing the names of two families; see BZN 64: 100–102 and Opinion 2209, BZN 65: 237–238).

Regardless of the consequences, the *Tachysurus* case is quite trivial. There were two possible solutions: (1) designation of a neotype or (2) suppression of the names under the plenary power of the Commission. Our decision to designate a neotype for *T. sinensis* was taken after consultations with colleagues. The neotype designation allows an immediate decision without involving the Commission and the resulting delays, printing costs, work load, etc.; this is the solution we chose. We regret that the application by López et al. has now postponed a stabilisation of the names for this genus by several years and generated expense and work. Our decision was bolstered by the relative unimportance of the case, as discussed above.

We wish to comment on one of López et al.'s concluding sentences that 'the original description of *T. sinensis* ... is unlikely ever to yield a satisfactory association with a recognised group'. That an original description be deficient is not a problem in itself. The association of a name to a taxon is made by the type, not by the description, and this was exactly the purpose of the neotype designation that we made.

In conclusion, we suggest that the Commission should not use its plenary power for this relatively minor case, which has been unambiguously cleared by the simple application of the Code.

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Comments on the proposed conservation of usage of *Testudo gigantea* Schweigger, 1812 (currently *Geochelone (Aldabrachelys) gigantea*) (Reptilia, Testudines)
(Case 3463; see BZN **66**: 34–50, 80–87, 169–186; 274–290; 352–357)

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I am writing in support of Case 3463. I am a non-specialist in this field and as such I found the taxonomy of the Indian Ocean giant tortoises to be complicated and confusing when researching the topic for my book on these animals, *A Sheltered Life* (2004). Based on a literature survey and interviews with researchers, I concluded that *Geochelone (Aldabrachelys) gigantea* was the most appropriate name for this important and iconic species. However, after the book's publication I received correspondence which opposed my use of this name. As an interested observer, I am perturbed by the continuing uncertainty connected with the naming of the Aldabra tortoise and so I strongly support Dr Frazier in his desire to settle this nomenclatural issue.

(2) Roger Bour

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Jean-Jacques Dussumier and Aldabra

Pat Matyot (2009) has raised interesting but delicate questions in connection with the lectotype of *Testudo dussumieri* Gray, 1831. Did Dussumier really travel to Aldabra, and therefore is this specimen really an Aldabra tortoise? First, we could extend the questions such as ‘is the present Aldabra the same island as that so named in the 18–19th centuries?’ (see e.g. Devaux 2006, p. 30, about the Aldabra map by Picault & Grossin, reproduced by Günther (1877), which actually shows the present Farquhar), or even ‘did Dussumier really exist?’ Laissus, his only known biographer, begins his notice with the words ‘La vie de Jean-Jacques Dussumier n’est que très imparfaitement connue et seulement dans ses épisodes principaux’ [‘Jean-Jacques Dussumier’s life is very imperfectly known and then only during his main episodes’] (Laissus, 1973, p. 387).

Next, it must be emphasised that at the time of Dussumier’s travels, Aldabra was already well known for its tortoises, and these tortoises were regularly brought to (inter alia) La Réunion island – sailors did not wait until the formal possession of Aldabra in 1892 – as reported in the local newspaper *La Feuille hebdomadaire de Bourbon*, for instance n°628 (12.01.1831): ‘Belles tortues d’Aldabra à vendre à des prix modérés. S’adresser rue du Barachois . . .’ [‘Beautiful Aldabra tortoises for sale at moderate prices. Address rue du Barachois . . .’] (Bour, 1981, p. 122). If Dussumier did not really go to Aldabra, he could have intercepted a ship with a load of tortoises close to the island, or even bought some genuine specimens on Réunion or elsewhere. But could we really prove that Dussumier never landed on Aldabra?

We hardly understand the comments by Matyot about the correctness or completeness of Dussumier’s collecting data. Dussumier himself wrote in 1830: ‘Pour tous [fish specimens] j’ai eu soin de tenir un registre, où j’ai inscrit, au numéro correspondant à celui que porte chaque individu, les couleurs qu’il avait au moment où il a été pêché, et j’y ai joint les renseignements que j’ai pu me procurer, après en avoir vérifié l’exactitude’ [‘For all [fish specimens] I have been careful to keep a register where I have noted, against the number corresponding to that carried by each individual, the colours it possessed at the time it was caught, and I have added such bits of information as I have been able to get, having checked their accuracy’] (Laissus, 1973, p. 392). Such care was highly appreciated by the exacting Cuvier, and

Matyot's comments outlining that 'Gray was tempting men to steal and sell him their specimens' are irrelevant. In the present case, Gray just saw (in 1829) the specimen in the Leiden Museum, and at that time he had no connection with either the Paris Museum or its associated sellers 'on the sly' or with Dussumier himself. On the other hand, as he did with other observed specimens, Gray approximately copied and then published in 1831 the data written on the tag, in this case Dussumiere [sic] as collector and Aldebra [sic] as locality, and we see no reason to doubt their accuracy. As pointed out by Matyot himself, fifty years later Hubrecht (1881), at that time curator of fishes at the Leiden Museum, repeated the same data. The specimen had been labelled by Hermann Schlegel, also a former curator, who later described the Round Island Boa (Schlegel, 1837) and dedicated it to its collector, Dussumier, 'voyageur infatigable et ami éclairé des sciences' ('tireless traveller and enlightened friend of Science').

Finally, Matyot (2009, p. 353) mixed up two distinct young specimens collected by Dussumier, one true (granitic) Seychelles tortoise, seen by Duméril & Bibron, still in the Paris Museum (MNHN 1942; Bour, 2006) and the Aldabra tortoise, seen by Gray, still in the Leiden Museum (RMNH 3231). Dussumier, himself, clearly separated them, on morphological as well as on geographical bases, but it is likely that Matyot never saw either one.

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(3) Roger Bour, Peter C. H. Pritchard and John B. Iverson
(addresses as above)

The present statement is proposed in order to establish definitely on which bases the valid scientific name of the Aldabra tortoise rests. We specifically address the five major points of contention which were disputed in the previous comments about this case published in this journal (BZN, **66**(1), **66**(2) and **66**(3)). We claim to be professional taxonomists of some experience and we aspire to take into account only factual, objective data. The articles and recommendations of the International Code of Zoological Nomenclature presently in force, here the 'Code', are followed. The colleagues who claim they refuse to make the adjustment of giving up the name *gigantea* for the Aldabra tortoise need to agree that, for 200 years, many changes were implemented in the phylogenetic and taxonomic appraisal of the group of tortoises at stake. 'Comfort levels' are not pertinent to the case at hand, and emotion and personal preference are not the criteria by which the case should be judged.

The quality of Schweigger's diagnoses and descriptions is poor

The work of Schweigger (1812) is based on actual specimens, and includes measurements for the new species. It is without any doubt the best of its epoch. At that time, other similar works were mainly founded on previous publications and on more or less literary sources. If Schweigger's descriptions are deemed inadequate, then all descriptions prior to at least Duméril & Bibron (1835) could be called into question. Schweigger mainly worked with the collections of the Paris Museum (MNHN), and presently the type specimens of 14 distinct species described by this author have been identified in this institution, thanks to the accuracy of the publication (see Bour, 2008b). We wonder who among the authors of the published comments have directly read and/or translated the original Latin description, and who among those who have questioned the rediscovery have actually seen the types of any of these early names. Unfortunately, this case is not an isolated one. We predict that future morphological and molecular analysis of type material will show that many names have been misapplied or misunderstood in the past.

The holotype of *Testudo gigantea* Schweigger, 1812 was 'lost' for nearly two centuries

In fact this holotype was misplaced and wrongly identified for a long time. The specimen was also studied and measured by Duméril & Bibron (1835), who did not recognise it as being the 'type' of this species. A careful reading of their opus reveals several other similar misinterpretations, but such an exposition is beyond this note. The recent rediscovery of the type of *T. gigantea* in the MNHN is used by some as argument against our proposition, but we will not debate the defamatory insinuation of a timely rediscovery, like 'rediscovered just when it was supportive for their point of view'. Actually this is not unusual, especially given that few modern chelonian researchers deem the examination of type material as essential to systematic study. We can give several references of recent 'rediscoveries' of type specimens: Iverson & McCord (1989) for *Emys muticus* Cantor, 1842; Pritchard (1996) for *Testudo ephippium* Günther, 1875; Bour & Maran (1998) for *Emys leprosa* Schweigger, 1812; Bour (2008a) for *Testudo angulata* Schweigger, 1812; Rhodin & Carr (2009) for *Testudo scripta* Schoepff, 1792. In some cases, these discoveries challenged the 'accepted' nomenclature: that is science and science recognises change; if not, it is no longer science, it is dogma.

This is not the holotype of *Testudo gigantea*

Bour (2006) has extensively studied each of the details provided in the description(s) of *Testudo gigantea* Schweigger, 1812, which led to the recognition that MNHN 9554, long identified as *Chelonoidis denticulata* (Linnaeus, 1766), a yellow-foot tortoise, is undoubtedly the holotype. But who really understands the diagnostic value of 'testa cylindracea . . . pedes squamis robustis, latissimis robusti . . . marginis viginti tres, aequalis'? Actually, among all known chelonians, a large and elongated tortoise with large scutes on the forearms, no cervical (nuchal) scute, and rounded flanks could only apply alternatively to a Mascarene tortoise (genus *Cylindraspis*); but the origin of the specimen (Brazil, via Lisbon) removes any doubt. It must be explained here that the MNHN collections have gone through a period of disorganisation from 1965 to the opening in 1994 of the 'Zoothèque', an underground storage

building. Several comments allude to a deficient original description, but none of them has provided any precise character that would support a refutation of the identity of the type of *T. gigantea*; they have simply rejected our interpretation. Moreover, no person among the detractors has asked either to examine the specimen, nor for pictures of it. Finally, we will just mention again one measurement: the holotype of *Testudo gigantea* had a curved length of 767 mm according to Schweigger; the large specimen of *C. denticulata* measured by Duméril & Bibron had a curved length of 770 mm; and the 'rediscovered' specimen of *C. denticulata* (MNHN 9554) has a curved length of 770 mm. Sometimes numbers are more eloquent than a long description.

The neotype designation is the solution

We here strictly quote the Code, precisely the relevant parts of Article 75.3. A valid neotype is designated when the designation is published with the following particulars:

'75.3.4. the author's reasons for believing the name-bearing type specimen(s) (i.e. holotype, or lectotype, or all syntypes, or prior neotype) to be lost or destroyed, and the steps that had been taken to trace it or them'. Such mandatory statements are completely wanting in Frazier's (2006a) paper.

'75.3.5. evidence that the neotype is consistent with what is known of the former name-bearing type from the original description and from other sources'. This point was already raised by Bour (2006), who noted these differences between the neotype and the holotype: 'e.g. absence vs. presence of a cervical scute; limbs shielded by tough and very broad scales vs. only postcranial skeleton, and fragments of skin'; we can also add: a full specimen (head, limbs, tail are described) vs. a shell.

'75.3.6. evidence that the neotype came as nearly as practicable from the original type locality [Art. 76.1] and, where relevant, from the same geological horizon or host species as the original name-bearing type'. The neotype came from Aldabra, the holotype from Brasil, unless someone can demonstrate that the latter is wrong.

'Recommendation 75B. Consultation with specialists. Before designating a neotype, an author should be satisfied that the proposed designation does not arouse serious objection from other specialists in the group in question'. Nothing was submitted at least to the present authors or to Justin Gerlach, who are among the taxonomists who recently published the most extensively on the systematics of these tortoises.

Finally, according to Article 75.8, a holotype always out-trumps a neotype: 'If, after the designation of a neotype, the name-bearing type (holotype, syntypes, lectotype or previous neotype) of the nominal species-group taxon that was (were) presumed lost is (are) found still to exist, on publication of that discovery the rediscovered material again becomes the name-bearing type and the neotype is set aside . . .'. The only conclusion is that the neotype designation is both unnecessary and unacceptable.

The stability stands with the name *T. gigantea* Schweigger, 1812

Beside the rebuttal of the identity of the type specimen of *T. gigantea*, a major expressed argument is the stability of the name in connection with the Aldabra

tortoise. First, we note that the most recent (1982–2006) 36 names (nominal combinations) for the Aldabra tortoise, as listed by Fritz and Havaš (2007), only include a single combination that contains the word *gigantea*. Second, in order to have an idea about the respective importance of the main combinations used to name the Aldabra tortoise, and the involved genera, we used ‘Google’ data, i.e. a procedure which can be reproduced by anyone, but whose results may be very volatile, as developed below. We limited our research to the species *T. gigantea* Schweigger, 1812, *T. dussumieri* Gray, 1831, and *T. elephantina* Duméril & Bibron, 1835. The results (updated on 22 October 2009) are the following:

Combination used	Occurrence	% of subset
<i>Testudo gigantea</i>	8130	85.1
<i>Testudo elephantina</i>	1290	13.5
<i>Testudo dussumieri</i>	136	1.4
<i>Geochelone gigantea</i>	12500	91.6
<i>Geochelone elephantina</i>	71	0.5
<i>Geochelone dussumieri</i>	1080	7.9
<i>Aldabrachelys gigantea</i>	4130	38.5
<i>Aldabrachelys elephantina</i>	6360	59.3
<i>Aldabrachelys dussumieri</i>	234	2.2
<i>Dipsochelys gigantea</i>	255	1.3
<i>Dipsochelys elephantina</i>	2250	11.2
<i>Dipsochelys dussumieri</i>	17600	87.5
<i>Aldabrachelys</i> (alone or combined)	13700	16.8
<i>Dipsochelys</i> (alone or combined)	67900	83.2
TOTAL <i>gigantea</i>	25015	46.3
TOTAL <i>elephantina</i>	9971	18.5
TOTAL <i>dussumieri</i>	19050	35.3

These data reveal that an agreement on usage for the species or the genus names does not exist. Actually these figures are continually moving and they obviously reflect a drift, rather than providing an absolute amount. On 1 August 2009 the number of returns for *Aldabrachelys* was 9510, for *Dipsochelys* 88100; as shown above, on 22 October (when this paper was submitted for publication) this number was 13700 for *Aldabrachelys*, 67900 for *Dipsochelys*; finally, on 28 December (a corrective was sent to the editor) this number was 23200 for *Aldabrachelys*, decreasing to 52700 for *Dipsochelys*. Moreover, within two months some references have overwhelmingly increased: *Testudo elephantina* from 1290 to 5300, *Testudo dussumieri* from 136 to 13800, *Testudo gigantea* from 8130 to 91200! These figures greatly confirm that ‘Google’ numerical data, if applied for more than a brief period, should be used and interpreted with caution, as already underlined by Dubois (2007) and repeated by Frost et al. (2009). In fact, it could be argued that only figures obtained prior to the raising of the case by Frazier (2006a) should be considered, as they were not biased by the debate (see in this respect Dubois, 1997: 319). We must also note that the title of the Case in the ICZN Bulletin was itself biased, including ‘Currently *Geochelone* (*Aldabrachelys*) *gigantea*’, despite a request by one of us (PCHP). This combination only returned 76 ‘hits’.

Presently, all mentions of *gigantea* (including *Testudo gigantea*, which is obviously an outdated combination, used by non-taxonomists) added together show that it is

the most used species epithet by only a moderate margin (46.3% vs. 35.3% for *dussumieri*). On the other hand, the most used combination is *Dipsochelys dussumieri*: 17600 returns vs. 12500 for *Geochelone gigantea* (58.5% vs. 41.5%). However, it is clearly evident that there is no consensus, no established name, i.e., there is not current stability, contrary to the allegations of many comments and of the title of the Case. It simply cannot be argued that the current name is *gigantea*. Furthermore, the only numerically significant observation is the predominance of *Dipsochelys* over *Aldabrachelys* (83.2% vs. 16.8%).

The ‘Code’ must not be taken apart; it must be understood, accepted and followed

Should zoological nomenclature be regulated by a set of rules or by ‘polls’ open to anyone, even without any experience in taxonomy? If so, then the easiest way would simply be to get rid of the Code, and let so-called ‘consensus’ establish the valid names of taxa. Experience in the past has amply shown that consensus rarely ever leads to stability and clarity in the use of names, and often leads to chaos, which is precisely why a Code had to be established in the late 19th century. We believe that dismantling the Code in favor of common opinion would be a mistake.

Finally, why should we reject the name *Testudo dussumieri*, which honours the memory of Jean-Jacques Dussumier, the first traveller who brought back an Aldabra tortoise with its precise locality and offered it to science? If one operates by the letter of the law (Code), as we have, and not by passion or emotion, it is clear that the first valid name for the Aldabra tortoise is *Testudo dussumieri*.

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(4) Gregory B. Pauly

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I am writing in support of the proposal described in Case 3463 to conserve the name *Testudo gigantea* Schweigger, 1812 for the Aldabra tortoise by maintaining a recently designated neotype and suppressing the name *Testudo dussumieri*. Such an action would alleviate any recent confusion and nomenclatural instability that might have arisen regarding the most appropriate name. This confusion stems from the uncertain species identity and collection locality of the specimen used in Schweigger's description; this specimen lacked individual identification (e.g., an accession number) and was only listed as being 'in the Paris Museum.' Recognising that the type specimen was unknown, Frazier (2006) designated a neotype for *Testudo gigantea* to stabilise the nomenclature of the Aldabra tortoise. Subsequently, Bour (2006) claimed to have found Schweigger's lost specimen (MNHN 9554), which he identified as the South American taxon *Chelonoidis denticulata*. However, there remains uncertainty as to whether MNHN 9554 is the specimen examined by Schweigger, in part because this would require misidentifications by Dumeril and Bibron (1835) who were in contact with Schweigger and who specifically stated that *T. gigantea* of Schweigger was not the species that we now call *C. denticulata*. Given this uncertainty, taxonomic debates and nomenclatural instability will continue for the Aldabra tortoise without action by the ICZN. Further, even if MNHN 9554 could unquestionably be identified as Schweigger's tortoise specimen, under Article 75.6 prevailing usage should be conserved by designation of a neotype. To promote stability and universality, I support maintaining USNM 269962 as the name-bearing neotype. A significant advantage of this approach is that it results in continuity of usage of the nomen *gigantea*, which has been used for over a century in numerous scientific and non-scientific writings to reference the extant tortoises from Aldabra Atoll.

(5) Walter G. Joyce

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I too support the application of Frazier to conserve *Geochelone gigantea* Schweigger, 1812 by accepting his neotype designation. As recently as 2004, my colleagues and I (Joyce et al., 2004) used the term *Dipsochelys dussumieri* (Gray, 1831) to refer to the Aldabran giant tortoise. However, Frazier compellingly illustrates that usage of this term has resulted in substantial nomenclatural instability. Much of the problem is ultimately based on the highly confusing type situation. I thus fully agree that stability is best served by accepting Frazier's neotype and by conserving the name that has been used most consistently for the last 75 years, i.e. *Geochelone gigantea*.

Additional reference

Joyce, W.G., Parham, J.F. & Gauthier, J.A. 2004. Developing a protocol for the conversion of rank-based taxon names to phylogenetically defined clade names, as exemplified by turtles. *Journal of Paleontology*, **78**: 989–1013.

(6) Anthony Cheke

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The remarkable and impassioned correspondence on the name of the Aldabra tortoise has thrown up some information that requires further notes to supplement my earlier submission (BZN 66: 174–176).

1. Matyot (BZN 66: 352–354) has offered evidence to suggest that it is unlikely that Dussumier collected specimen RMNH 3231, designated as lectotype of *Testudo dussumieri* by Bour (2006b), on Aldabra. Although many details of his travels are unclear (see Laissus, 1973), I am inclined to agree that Dussumier did not visit Aldabra, but this does not mean the animal did not originate there, nor does it invalidate the name under the Rules. At that time, when native tortoises in the granitic Seychelles were so reduced that recorded export to Mauritius had ceased (Toussaint, 1967; Stoddart & Peake, 1979), from 1815 the principal source of tortoises for human consumption on Mauritius and the granitic Seychelles was Aldabra (Mondini, 1990). Fairfax Moresby (1842, p.741), writing in 1822, reported ‘Aldabra is annually visited in the favourable monsoons for the land-tortoise, which are to be found most plentifully. They grow to a large size, are taken to Mahé or the Mauritius, and sold from one to three Spanish dollars each’. Some of those taken to the Seychelles were then re-exported to Mauritius. Théodore Sauzier (1893) (also Stoddart, 1971, Stoddart & Peake, 1979) cited import from the Seychelles of 3400 tortoises into Mauritius in 1826 alone. The origin of 2600 he presumed to be Aldabra on the grounds that there were no longer such numbers in the granitics; the other 800 came directly from Providence. A handwritten footnote by Sauzier in his own copy of Sauzier (1893) uses further manuscripts to raise the 1826 import total to 4800: 4000 on ships incoming from the Seychelles, 800 direct from Providence (copy in the Radcliffe Science Library, Oxford). It should be added that, as George Harrison, the lessee of Providence, was also government agent in the Seychelles, the Providence shipment could also have originated on Aldabra. Stoddart & Peake (1979) doubted the aboriginal existence of tortoises on Providence and suggested this shipment reported by Sauzier may have been marine turtle, but the number seems excessive for a single haul of *Chelonia mydas*. Slave ships used the excuse of visiting Aldabra for tortoises to cover their illegal trade (Scarr, 2000), also actually collecting tortoises to maintain the story. The slavers were often trafficking to Réunion (McAteer, 2000), and Bour (1981) reported Aldabra tortoises advertised for sale there in 1831 and 1834. Dussumier visited all these islands regularly (Laissus, 1973; Bour, 2006a; Matyot, BZN 66: 352–354), and could easily have obtained an Aldabra tortoise on any one of them. He is known to have been in Mauritius in 1825 or early 1826 (Bélanger, 1834) and visited the Seychelles on the same voyage, which ended in spring 1826 (Laissus 1973) and not spring 1825 as reported by Bour (2006a). Dussumier was back in the Seychelles in 1827 and again in April 1828, then back and forth in the Indian Ocean with stops at Mauritius, Réunion and the Seychelles between 1828 and 1830, before returning to France in September that year. Paris Museum records show he deposited, inter alia, 11 reptile specimens and 13 live tortoises in November 1827, and 11 chelonians in 1830 (Laissus, 1973), though the last lot was too late to have included the *T. dussumieri* lectotype in Leiden, which Gray saw on his visit in 1829 (Bour, 2006a). As an assiduous collector for the Paris museum he would have ascertained its origin, and it is clear from

the citations earlier that the provenance of tortoises was well known in the islands. Matyot (BZN 66: 352–354) argues it would be atypical of Dussumier to collect ‘only a young tortoise and no other specimen from Aldabra’, but given the ubiquity of living Aldabra tortoises on the Indian Ocean islands he visited, he probably assumed they were well enough known as adults, and thus brought back only a juvenile. As Bour (2006a) has enumerated, he also brought adults of the Aldabran form back from Anjouan and native forms from the granitic Seychelles. Matyot further speculates that because of some possible shenanigans in the way Gray acquired specimens, the origin of this specimen should be disregarded, but a) it was not acquired by Gray for the British Museum (now NHM), but held in Leiden, and b) why invent the then extremely obscure (to Europeans) locality of Aldabra if there was no reason to do so? Irrespective of where the specimen was collected, it has been identified by all who have studied its morphology as a juvenile Aldabra tortoise (see photos in Gerlach, 2004a; Bour, 2006b) and has been shown by mtDNA analysis to be an Aldabra-Seychelles tortoise (Austin et al., 2003); hence it remains a valid lectotype for *Testudo dussumieri*. The only other possible origin of Dussumier’s specimen RMNH 3231 would be a native granitic Seychelles tortoise, rare but not extinct in the mid-1820s, of which Dussumier also brought back a juvenile (Bour, 2006a). Although the juveniles are similar (as is their DNA), they are morphologically distinguishable (Bour, 2006a; Gerlach, 2004a), and in any case the granitic Seychelles forms are generally considered (Austin et al., 2003, Palkovacs et al., 2003, Rhodin et al., 2009) to be conspecific with those on Aldabra; even Gerlach (2004a), while treating them as species, conceded that they were probably only subspecifically distinct. Hence *dussumieri* is the earliest valid name for the species as a whole if one accepts that the specimen of *Chelonoidis denticulata* MNHN 9554 is the rediscovered type of *Testudo gigantea* (Bour, 2006b; Bour & Pritchard, BZN 66: 169–174). Those who doubt this identification appear to do so on very weak grounds.

2. It is ironic that the holotype of *Testudo gigantea* turns out to be a *Chelonoidis*, for this brings out an interesting contrast in perception amongst those concerned with tortoises. Until recently the Galapagos tortoise complex, even more iconic and endangered than those on Aldabra, was generally known as *Geochelone elephantopus*, but has morphed in recent decades into *Chelonoidis nigra*, apparently without any of the arguments surrounding the nomenclature of the Aldabran animals—no cases or discussion in the BZN, or other controversy that I can locate. As Bour (2006b) pointed out: ‘Following Pritchard (mainly 1996), among some other changes, the universally used *Testudo elephantopus* Harlan 1827, a name for the Galápagos tortoises, was replaced by *Testudo nigra* Quoy & Gaimard 1824, apparently without major objection from scientists. On the other hand, Frazier (2006) strongly emphasised the general instability and chaos regarding the valid name of the Aldabra tortoise’. Crumly (1982), using morphology, drew attention to the apparent polyphyly of the broad genus *Geochelone*, and Pritchard (1984) first drew attention to the fact that *Testudo nigra* Quoy & Gaimard, 1824 pre-dated *T. elephantopus* Harlan, 1927. Even before Crumly’s conclusions were amply confirmed by DNA studies (e.g. Le et al., 2006), the use of *Chelonoidis* Fitzinger, 1835 had become frequent, and that of *nigra* almost universal. However, the IUCN’s red list still uses *Geochelone* (www.iucnredlist.org/apps/redlist/details/9011/0; accessed online 30/12/2009) despite the SSC’s Tortoise & Freshwater Turtle Specialist Group (Rhodin et al., 2008; 2009) using *Chelonoidis* in their world checklist. CITES used *Geochelone nigra* as early as

1999 without complaint (Charette & Gallegos, 1999). Although the retention of *Geochelone* in the IUCN red list may indicate residual conservationist resistance to name change, there seems to have been no suggestion that changing the Galapagos tortoise nomenclature was going to destabilise conservation measures or otherwise cause irretrievable chaos and misunderstandings as claimed by the proponents of Frazier's case. It is hard to avoid concluding that issues beyond mere science and nomenclature are at issue here.

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I find Pat Maytot's refutation of Marinus Hoogmoed's arguments compelling. I see enough reasons to retain stability (*gigantea*) and no justification to deviate from this.

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We note that despite the extensive discussions and opinions on this issue, one rare point of general agreement seems to be to accept that there is only a single species of 'giant land tortoise' on Aldabra Island, so the problem simply amounts to knowing what it should be called. If we include the original application by Frazier, in 2009 no fewer than 91 persons commented so far on this case in 72 contributions in four instalments of this Bulletin, covering 66 pages. We note that 85 of the intervening parties were in favour of the name *Testudo gigantea* for this species and 6 were in favour of the name *Testudo dussumieri*. However, we are convinced that nomenclatural decisions by the Commission should not rely on polls or on persons of variable expertise and insight, nor on campaigns seeking to gather supporters to form a 'pressure group', but should be based upon due consideration of explicit arguments, even if expressed by a 'minority' of stakeholders.

As the present curator (AO) and the previous two curators (AD, ERB) of the herpetological collection of the Muséum National d'Histoire Naturelle (Paris), one of the oldest and most important herpetological collections in the world, we agree with Gerlach's statement that the comments in favour of each name for the Aldabra tortoise rest on (1) taxonomic arguments regarding the identifications of the type specimens; (2) arguments for 'nomenclatural stability', relating to *usage* of names, irrespective of the identification of the taxa; (3) arguments concerned with the *conservation biology* of these tortoises and (4) arguments relating to the *appropriateness* of each name for the taxon. Let us consider these four sets of arguments in the reverse order.

Name appropriateness

Gerlach and Hansen discussed the respective appropriateness of the names *gigantea* and *dussumieri*, and *Aldabrachelys* and *Dipsochelys*. This discussion is totally irrelevant to the present issue. As pointed out by Dubois & Raffaëlli (2009, p. 18), scientific names are not descriptions, diagnoses, statements of characters, distribution or other characterisations of the taxa they designate, nor models or theories about the hypothesised origin of these taxa, nor praise for their authors, for the discoverers of the taxa or for the persons to whom they may be dedicated. They are just neutral *labels* designating unambiguously and universally given taxa within the frame of a given taxonomy, i.e. allowing automatic reference to the taxa recognised by taxonomists at a given stage of their research. These labels allow storage and retrieval of the information accumulated in taxonomies, but it is not mandatory that the names have any meaning at all. In many cases, factually true information about coloration, body form or geographic range may indeed be encapsulated in either or both of the two terms of a binomen, but in many other cases the name provides misleading statements about the taxon. This is why the Code expressly states that availability (and consequently validity) of names 'is not affected by inappropriateness' (Article 18), and allows a new generic or specific name to be 'empty of meaning', for example for being 'an arbitrary combination of letters provided this is formed to

be used as a word' (Article 11.3). If it were not so, thousands of zoological names would have to be changed. There is no point in further discussing the question of appropriateness of names in the present case.

Conservation biology

This was referred to by 42 of the 85 (49.4 %) supporters of the application, but, as correctly stated by Gerlach (BZN 66: 184–186, June 2009), it is not convincing: 'the tortoises referred to are explicitly the Aldabra tortoises, for which there is no significant identification issue whatever name is applied'. Whenever a decision is made regarding the valid name of this species, it will be a trivial matter to incorporate it in official checklists and documents, as rightly stressed by Hoogmoed (BZN 66: 354–356): 'international bodies like CITES are able to change names of species on their lists with few problems and without jeopardising the protection of the taxa in question. And the same holds true for governments and their agencies'. Such changes of names of taxa on official lists have already occurred on several occasions, without causing any problem for the conservation policy of the taxa concerned. As long as the species is well identified, a unique and universal name is not essential for the conservation of threatened taxa. Whereas the Aldabra tortoise is in Annex 2 of the CITES list, the following three taxa are in Annex 1 and their names, long considered to be 'universal', have changed during the last 50 years: the mammals *Papio sphinx* (Linnaeus, 1758) and *Gazella dama* (Pallas, 1766) have become respectively *Mandrillus sphinx* and *Nanger dama*; the bird *Diomedea albatrus* Pallas, 1769 changed into *Phoebastria albatrus*; the fish *Pangasionodon gigas* Chevey, 1931 is now known as *Pangasius gigas*; and the chelonians *Kachuga tecta* (Gray, 1831) and *Testudo elephantopus* Harlan, 1827 are now on the list respectively as *Pangshura tecta* and *Chelonoidis nigra* (Quoy & Gaimard, 1824). The last example is very similar to that of the Aldabra tortoise: it is also a threatened insular giant tortoise of which both the generic and specific names were changed. In some other cases a single species appears under different names on different lists: for example, the bird mentioned on the CITES list as *Houbaropsis bengalensis* (Gmelin, 1789) appears on the IUCN list as *Eupodotis bengalensis*. We know of no evidence that these changes caused any problem for the conservation policy of these species.

Of course, we agree with Vences (BZN 66: 282, September 2009) that, for conservation (but also other) purposes, stabilising the nomenclature of the Aldabra tortoise will ultimately be important, and that, now that Frazier has challenged the correct nomenclature, it is unlikely that the scientific community will reach a consensus on which name to use without an unambiguous decision of the Commission. But this does not imply in the least that this decision should follow Frazier's suggestion. The merits of Frazier's proposal have to be evaluated in the light of the next two arguments.

Nomenclatural stability

Among the 85 persons who expressed their support for the use of the name *T. gigantea*, 59 (69.4 %) did not challenge the respective identifications of the lectotype of *T. dussumieri* presented by Bour (1984) or of the holotype of *T. gigantea* presented by Pritchard (1986) and Bour (2006). Their opinion rested on the assumption that

usage of *T. gigantea* is sufficiently well established to require conservation of this name through use of the plenary power of the Commission, whatever species its holotype represents. However, comments by Bour & Pritchard and Cheke (BZN 66: 174–176, June 2009) disagreed with this assumption. The statement by Frazier regarding usage of the name *gigantea* was clearly demonstrated to be in error by Bour, Pritchard & Iverson (BZN 67: 73–77, March 2010), through a survey of Google. In recent years, this single species has been designated mostly under 3 different specific names, *dussumieri*, *elephantina* and *gigantea*, and 3 different generic names, *Aldabrachelys*, *Dipsochelys* and *Geochelone*. These data show: (1) that no universality of usage exists regarding these names; (2) that the relative numbers of authors using each of these names are constantly changing; and (3) that, during recent months, the relative frequency of usage has increased for *gigantea* and *Aldabrachelys*, but decreased for *dussumieri* and *Dipsochelys*. As a matter of fact, the figures obtained about nine months after publication of Frazier's application show a strong impact of this application itself upon usage. In addition to the content of the application itself and personal contacts of its author with colleagues, this is clearly due to (1) the fact that the title of this application contains the misleading statement 'currently *Geochelone (Aldabrachelys) gigantea*', and (2) the fact that the *Code* states that while such a case is under consideration the invalid name (under the normal rules) has to be used! On the last check-list of the extant turtles and tortoises by Rhodin et al. (2009), contrary to that by Fritz & Havas (2007), both combinations *Aldabrachelys gigantea* and *Dipsochelys dussumieri* are proposed together as an alternative to name the Aldabra tortoise. Pending the decision of the Commission, this appears to us the best attitude to adopt in the present highly controversial situation.

The arguments of the supporters of Frazier's application are mostly directed against the name *dussumieri*, but this is a biased presentation of the facts. The name *dussumieri* was resurrected as the valid one for the Aldabra tortoise only in 1995 (Gerlach & Canning, 1995; Gerlach, 1997), but the fact that the name *gigantea* does not apply to the Aldabra tortoise had been established 13 years earlier, by Bour (1982). Bour had made an error concerning the biological species to which the holotype of *gigantea* belonged, an error corrected by Pritchard (1986) twenty years before the rediscovery of the holotype specimen by Bour (2006), but nevertheless it has been clear from 1982 that the name *gigantea*, created for a tortoise from Brazil, does not apply to the Aldabra tortoise. Therefore, between 1982 and 1995, pending the resurrection of the name *dussumieri*, it was normal and correct to use the name *elephantina* for this species, which explains why 18.5 % of the Google hits obtained by Bour, Pritchard & Iverson (BZN 67: 73–77, March 2010) concern this name. The Seychelles Island Foundation (SIF), some twenty members of which signed comments in support of the use of *Geochelone gigantea*, still recently used official documents where the Aldabra tortoise was named either *Dipsochelys dussumieri* or *Testudo elephantina* (e.g. Beaver & Gerlach, 1998; Anonymous, 2001). Furthermore, and contrary to the statements of Frazier and his supporters, the name *elephantina* had also been used a long time prior to 1982 by some authors, and there was no period in history when the name *gigantea* was the only one used for the Aldabra tortoise. During the so-called period of 'universality' of usage of the name *gigantea*, the name *elephantina* was regularly used as valid for a species or subspecies by a

minority of authors: e.g. Fritsch, 1871; Günther, 1877; Peters, 1882; G.A. Boulenger, 1889; Strauch, 1890; Schacht, 1903 (as *Testudo elephantina*); E.G. Boulenger, 1914; Geiman & Wichterman, 1937; Evans & Quaranta, 1949; Quaranta & Evans, 1949; Urbain et al., 1951; Wermuth & Mertens, 1961; Georg et al., 1962; Steers, 1968.

The *Glossary* of the *Code* (p. 121) defines 'prevailing usage' of a name as follows: 'that usage of the name which is adopted by at least a substantial majority of the most recent authors concerned with the relevant taxon, irrespective of how long ago their work was published'. This definition is not clear, as it does not provide guidelines to recognise 'the most recent authors' and 'at least a substantial majority', but the minimum that the latter words may mean is that this is a majority of 'much more than 50 %'. It is therefore clear that the argument of 'usage' does not hold in the present case. There has never existed any 'universality of usage' for the scientific name of the Aldabra tortoise, but a diversity of usages, and stabilisation of usage in this case should come from simply following the *Code*. If 'usage' of a specific name in 46.3 % of recent publications and internet documents, including many posterior to an application urging the Commission to stabilise this usage, against 35.3 and 18.5 % for two other names (see Bour, Pritchard & Iverson, 2010), could be retained to nullify the rules of zoological nomenclature, then we might as well get rid of these rules altogether, including the Principle of Priority and, why not, the entire *Code* itself, leaving so-called 'consensus' to decide upon the valid names of taxa.

Identification of the holotypes

Nineteen (22.4 %) of the 85 supporters of the name *T. gigantea* challenged the identification of the holotype of *T. gigantea* and one (1.2 %) did so for the lectotype of *T. dussumieri*. Because giant insular tortoises tend to share many homoplasies due to similar environmental conditions, we consider that the specific identification of museum specimens can be relied upon only if carried out by experienced taxonomists well-acquainted with the group of modern land tortoises. This is stressed by a droll example: one month after publication in this Bulletin of his support for the original application regarding this case, a museum curator sent the Paris Museum for identification a set of photos of a specimen of giant land tortoise, stating that he was 'not too sure' about what this specimen could be. Well, this specimen happened to be unquestionably . . . an Aldabra tortoise!

Among the 91 persons who commented on this case, only three have personally examined the holotypes of the two nominal species here at stake. The lectotype RMNH 3231 of *Testudo dussumieri* Gray, 1831 has been examined only by Hoogmoed (then curator of the RMNH collection), Bour (1984) and Pritchard (during a visit to the Leiden Museum in 2000), and the holotype MNHN 9566 of *Testudo gigantea* Schweigger, 1812 has been examined so far only by Bour (2006), although Pritchard has examined an extensive set of colour photographs of this specimen, sent to him by Bour. All other authors who commented on the taxonomic allocation of these specimens did so only on the basis of the original descriptions (which they presumably read) or possibly of published photographs of the holotypes, if they indeed had access to their publication in a little known journal (Bour, 2006). None of them ever wrote to our Museum to request access to the holotype of *T. gigantea*, or to photographs, radiographs or measurements of it, and we note with some regret that perhaps even the assumption that the contributors to this discussion

read Schweigger's original work, as well as those of Pritchard and Bour, may be in error for some of them.

Among the 16 testudinid taxonomists involved in the discussion beside Bour, 5 expressly mentioned that they agreed with Bour's (2006) statement that the specimen MNHN 9566 is indeed the specimen that had been described by Schweigger (1812), 6 did not question this statement, and 5 (Arnold, Fritz, Meylan, Parham & Rhodin) expressed scepticism about it, but did not identify a single morphological or anatomical character of this specimen that was not compatible with the original description. Another taxonomist (Matyot) questioned the origin of the holotype of *T. dussumieri*, but did not provide a reasonable argument to back up this opinion (see Bour, Iverson & Pritchard, 2010).

Finally, none of these supporters of Frazier's application provided any argument to explain the discrepancies between the original description of *Testudo gigantea* by Schweigger (1812) and the biological species of the Aldabra tortoise. Therefore, following the precise conditions put by Article 75.3 of the *Code* for allowing a neotype designation, it is clear that, as stated by Bour & Pritchard, Cheke, Gerlach and Hoogmoed, the designation of a neotype for this species by Frazier (2006) is invalid, as this specimen does not come from the original type locality (Brazil) and differs in several important characters (see the comments by Bour & Pritchard and by Gerlach) from the original description. Nobody in the world can agree that a specimen from Aldabra qualifies as coming 'as nearly as practicable from the original type locality' (Article 75.3.6) of a tortoise from Brazil. Therefore, even if the holotype of this nominal species had not been rediscovered, this designation would be null and void, and should have been replaced by another one based on a tortoise specimen from Brazil or, if this had turned impracticable (e.g. because of restrictive laws on the export of specimens of this endangered species), from a neighbouring country.

Therefore, we concur with Bour & Pritchard, Cheke, Gerlach, Hoogmoed and Iverson that no evidence has been provided by the supporters of the application that Bour's (1984, 2006) taxonomic interpretations of the holotype of *T. gigantea* and of the lectotype of *T. dussumieri* are incorrect. These data dictate that the Commission should not use its plenary power to set aside all previous type fixations, validate Frazier's neotype for the former, and suppress the latter.

Discussion

As present or past curators of an important natural history museum collection, we are quite worried about the turn that this discussion has taken. Most of its actors based their comments on opinions, tastes, or just 'deep feelings', rather than on the respective merits of rational arguments. In particular, we were very shocked to see the publication of personal attacks against our colleague Roger Bour, questioning his honesty and suggesting that he manipulated scientific data. These published statements will remain available in the literature long after the death of all contributors to this discussion. We have known Roger for about 40 years and we would like to praise his scientific competence, his intellectual honesty and his refusal to make 'political calculations' to allow his opinions to win or to enhance his career. He has devoted a lot of his professional life to clarifying difficult taxonomic and nomenclatural problems in chelonians, identifying old 'forgotten' types in many museums worldwide, and thus permitting genuine nomenclatural stabilisation based on scientific data, not on 'impressions',

‘profound hunches’ or ‘lobbies’. We understand these repeated attacks as a disapproval and a denial of the quality of his work, and we think he deserves better treatment from the part of the many colleagues worldwide who benefited from his help in their research for decades. We consider this failure as a pernicious result of the opening of this unwarranted case in this Bulletin, which is itself a consequence of the emphasis put by the Commission in recent years on ‘usage’ against the rules of the *Code*.

We agree with Hoogmoed’s statement that ‘*Frazier’s proposal is completely unnecessary, because the facts are clear and the rules of the [Code] provide solutions for this situation*’. The case at stake here in fact concerns neither conservation biology nor nomenclatural stability, but simply the accuracy of taxonomic work.

The doubts cast by some authors about the rediscovery of a holotype in an old collection like that of the Paris Museum demonstrate a poor knowledge about such historical collections. As experienced taxonomists, we had on various occasions the opportunity to rediscover specimens that were not labelled as types, not only in the Paris Museum but also in other old historically important collections, like those of London or Berlin. An important part of the herpetological collection of the Paris Museum, but even more so of the mammal and bird collections of that institution, is composed of historical specimens, many of which can potentially be name-bearing types, or at least vouchers of specimens mentioned in ancient publications. Such publications date from the end of the 18th and the 19th century, when no such regulations as the *Code* existed and no proper labelling of specimens as ‘types’ could be done, as such a concept did not exist or was used in a very vague way (e.g. an author could then decide to replace the original ‘type’ by a ‘more appropriate’ specimen). In a work in progress, the type catalogue of hyloid frogs in the Paris Museum herpetological collection (Ohler et al., in preparation) covers 156 names; 67 (43 %) were created in works published before 1854, and 90 (58 %) before 1900, at the time of implementation of the first *Code* (the ‘*Règles*’). A similar proportion of old names would probably be found in other parts of the collection, or this proportion may even be higher for a well-studied group like the chelonians. Some of the intervenors in this debate seemed to consider that it would be a crime of lese-majesty to consider that Duméril & Bibron, ‘these two doyens of herpetology’ (Lenin & Frazier, 2009) could have made an identification error on a specimen. However, everybody can make a mistake and, considering the monumental work they produced, there is nothing surprising or shocking to note that Duméril & Bibron (1834–1854) made a number of mistakes, not only about the identity of the holotype of *Testudo gigantea* (e.g. Shea, 2001; Lescure & Ohler, in preparation).

Old museum collections covering the whole of zoology still harbour thousands of historical specimens, including name-bearing types that have not yet been identified as such. Every thorough survey of old specimens of any zoological group in such museums is an adventure which can be as exciting as field work in the remotest places of the earth. Doing so, one sometimes finds unexpected results, e.g. regarding the taxonomic identification of old name-bearing types, and some names have to change. The increased availability and application of DNA sequencing technology to the proper taxonomic identification of name-bearing types promises that the frequency of nomenclatural complications will only increase. Should curators and taxonomists stop exploring these resources to avoid such unexpected findings? Should they throw away these old specimens for fear that they would upset ‘usage’ of the names at stake and then threaten

the personal comfort of some persons long involved in researches dealing with these animals? Should we just close museums in order to please ‘conservationists’ (of names)?

Bouchet (BZN 66: 77, March 2009) rightly stressed that ‘Vertebrate paleontology survived the name *Brontosaurus* giving way to *Apatosaurus*’, and it can be quite safely added that the extinction of these animals was not caused by this synonymisation. All palaeontologists now use the name *Apatosaurus* for this genus, and this change did not create problems for non-taxonomists, who may still use the common English name ‘brontosaurus’ for these animals. Whatever scientific name will ultimately be retained for this species, the Aldabra tortoise is and will remain designated under its common name in many ‘non-taxonomic’ texts, including ‘conservation biology’ documents. Although different scientific names have been used for this species in the recent years, it has been clear to all involved that all those names designated the Aldabra tortoise and stabilisation of its scientific name will be an easy task as soon as the Commission has made its decision.

Conclusion

In conclusion, we urge the Commission to refrain from using its plenary power to suppress the holotype of *Testudo gigantea* Schweigger, 1812 or the name *Testudo dussumieri* Gray, 1831, and to simply place both these names, as defined by their name-bearing type specimens (respectively the holotype MNHN 9554 and the lectotype RMNH 3231), as well as the generic names *Aldabrachelys* Loveridge & Williams, 1957 and *Dipsochelys* Bour, 1982, as defined by their type species (respectively *Testudo gigantea* Schweigger, 1812 and *Testudo elephantina* Duméril & Bibron, 1835) on the Official Lists of Specific and Generic Names in Zoology.

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Having conducted systematic research on reptiles in the Indian Ocean for almost 25 years, I (and many others) have become increasingly frustrated by the ongoing nomenclatural confusion associated with the Aldabra tortoise. And now, it is remarkable to find 58 pages of Volume 66 of the *Bulletin of Zoological Nomenclature* being devoted to this one topic. This is a striking example where a ruling from the Commission is now urgently needed concerning Jack Frazier's Case 3463, which proposes to conserve the species name of the Aldabra tortoise as *gigantea*.

While I am sympathetic to the arguments made by colleagues that the holotype of *Testudo gigantea* Schweigger, 1812 is actually a *Chelonoidis denticulata* (Linnaeus, 1766) collected from Brazil, unfortunately, the rediscovery of this long lost holotype has not been universally accepted by the systematic community (see earlier comments on this case). Further, there is now new doubt that the lectotype of *Testudo dussumieri* Gray 1831 was collected from Aldabra (Matyot, BZN 66: 352–354, September, 2009).

The best solution for dealing with all this uncertainty is the designation of a neotype that clearly originates from Aldabra, and conserving the species name that has the broadest current recognition and usage. Jack Frazier's Case 3463 proposes that *Testudo gigantea* Schweigger, 1812 is conserved to stabilize the nomenclature of the Aldabra tortoise, and that the specimen USNM 269962 collected from Aldabra, is designated as the neotype for this species. I support the designation of this neotype with well-documented provenance from Aldabra and, based on the published comments presented in response to this case, it is clear that there is strongest support for conserving the species name *gigantea*.

Comments on the proposed conservation of usage of *Archaeopteryx lithographica* von Meyer, 1861 (Aves) by designation of a neotype.

(Case 3390; see BZN 64: 182–184, 261–262; 65: 314–317; 66: 87–88, 357–358)

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Padian's (BZN 66: 357–358) suggestion that the isolated fossil feather described by von Meyer (1861a) is a satisfactory holotype for the nominal species *Archaeopteryx lithographica* deserves to be rejected for several reasons. All of these points had already been addressed in the original application and/or in the published comments, but as they have been passed over without discussion, a recap seems to be necessary:

(1) The suggestion that the single feather can be unequivocally identified with the skeleton finds made to date is based on the premise that only one species of feather-bearing animals ever lived at the discovery localities and their surroundings. The taxonomic judgement that the skeleton finds made to date belong to a single

species may well be correct, but for those authors who distinguished several species of fossil bird amongst these finds it is impossible to identify the name *Archaeopteryx lithographica* with any of the skeletons if the feather is the type specimen. Further, it cannot be predicted with absolute certainty that another species of feathered animal will never be found at Solnhofen or its vicinity. In this case, again, the ‘holotype’ feather may turn out to be useless in deciding to which species the name *Archaeopteryx lithographica* actually belongs.

(2) It is good practice to base a taxon name, particularly a name so well known as *Archaeopteryx lithographica*, on a specimen which actually shows a large number of the characters defining the taxon. The London specimen is the only one to be considered for this purpose, as it was (contrary to Padian’s statement) originally associated by von Meyer (1861b and thereafter) with the name *Archaeopteryx lithographica*, albeit in a very ambiguous manner.

(3) According to Padian, ‘there is no reasonable disagreement that the name was applied to the feather [. . .] There is a possibility that von Meyer later intended the name also to apply to the first discovered skeletal specimen, although this is ambiguous and in any case irrelevant because the referral to the skeleton was secondary.’ Apparently Padian did not notice the analysis of von Meyer’s (1861a, b and 1862a) papers published in 2008 (BZN 65: 314–317). Von Meyer’s statements (1861b): ‘[. . .] I received news [. . .] that an almost complete skeleton of an animal covered in feathers had been found in the lithographic slate. [. . .] For the denomination of the animal I consider the term *Archaeopteryx lithographica* as appropriate’ shows that (a) he did not consider the feather as representative of the nominal species *Archaeopteryx lithographica*, (b) he provided no definition, however short or incomplete, of the ‘animal’, (c) he did not make an unequivocal statement whether he thought the feather belonged to the ‘animal’ called *Archaeopteryx lithographica*. Von Meyer’s wording suggests that the skeleton (the London specimen) could represent the animal which produced the feather, but does not actually state it, doubtless because he knew nothing about the skeleton. It is obvious that von Meyer intended to preempt the naming of this important discovery before he had any relevant knowledge of it.

In accordance with the foregoing, I maintain support for the original application of Bock & Bühler (BZN 64: 182–184) with the additions by Kadolsky (BZN 65: 314–317).

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I wrote previously in support of Bock & Bühler’s proposal to designate a neotype (BMNH 37001 in the Natural History Museum, London) for *Archaeopteryx lithographica*. In a recent comment, Padian (BZN 66: 357–358) expressed an opposite view. I would like to add a further comment to address these criticisms.

Padian might be correct in arguing that ‘there is no convincing evidence that the feather and the ten skeletal specimens do not belong to the same taxon’; however,

it is equally fair to say that there is currently no convincing evidence to demonstrate that they do belong to the same taxon (Elzanowski, 2002). How can we determine this? The core issue is, are we talking about the differences between various skeletons or the difference between the single feather and the skeletal specimens? If it is not even certain that the single feather belongs to the same taxon as the skeletons, or even to a bird (given the presence of feathers in other non-avian dinosaurs), then I would strongly suggest it is time now to consider a neotype for *Archaeopteryx* in order to discuss how many taxa actually existed among archaeopterids.

It should be pointed out that Padian's argument that 'no non-archaeopterygid theropod from the Solnhofen limestones is known to have possessed feathers' implies an assumption: the feather must be the same taxon as the skeletons of archaeopterygids, thus his conclusion is circular.

I also disagree with Padian that 'if a neotype were to be designated, it should be based on the best available skeletal specimen, regardless of the order of discovery'. To me, the criterion for choosing a neotype should follow the most important principles in taxonomy, i.e., convention and priority. BMNH 37001 represents the first reported skeletal specimen of *A. lithographica* that was discovered nearly as early as the feather. It has also been much more extensively studied and is possibly more commonly associated with the name than the feather and any other skeletons (see previous comment by Barrett and Milner (BZN 64: 261–262)).

Padian also commented on the feathers from the Jehol Biota. I agree that the presence of feathers in Early Cretaceous birds in China is irrelevant to this case. Yet, the presence of feathers or protofeathers in a number of non-avian theropod taxa including the COMPSOGNATHIDAE, which was also found at Solnhofen limestones, is probably not irrelevant. Padian's conclusion that 'they represent a variety of theropod taxa not found in the Solnhofen limestones, none of which belong to ARCHAEOPTERYGIDAE', is true but is clearly based on comparison of the Chinese feathered theropods with the skeletal specimens of ARCHAEOPTERYGIDAE, not the holotype feather. Furthermore, feathered dinosaurs are now not only known from the Early Cretaceous Jehol Biota but also from Middle to Late Jurassic biotas (Zhang et al., 2008; Hu et al., 2009).

Contrary to Padian, I believe there are at least two important reasons to designate a neotype for *Archaeopteryx*: firstly, there is at least a possibility that there are more than one species of *Archaeopteryx* or archaeopterid in the Solnhofen fauna, and the holotype does not preserve sufficient anatomical information to be referred to any of these potentially valid taxa with confidence; secondly, feathers of modern appearance are now known, without doubt, from non-avian dinosaurs whose stratigraphical range spans 160 Ma to 120 Ma. Furthermore, even if the holotype feather does indeed belong to a bird, there is no guarantee that feathers will not be found in non-avian dinosaurs at Solnhofen in the future.

For many reasons, I do not see any advantage in retaining a single feather that contains almost no taxonomic information as the holotype of such an important biological species, which is now known from several complete skeletons. Finally, I disagree with Padian's comment that 'the feather should remain the holotype until there is consensus that more than one species is represented in the fossil population at Solnhofen'. If the single feather remains as the holotype of *A. lithographica*, I

wonder how we can ever reach a consensus that more than one species of *Archaeopteryx* is represented in the fossil population at Solnhofen in addition to *A. lithographica*.

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Comments on the proposed conservation of *Anthochaera* Vigors & Horsfield, 1827 and *Philesturnus* Geoffroy Saint-Hilaire, 1832 (Aves) by suppression of the generic name *Creadion* Vieillot, 1816

(Case 3499; see BZN 66: 332–339)

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We wish to comment on the proposed suppression of *Creadion* Vieillot, 1816, as one aspect of the submission as presented is contentious. While it may or may not affect the outcome, we would nevertheless like the Commission's opinion.

The contentious issue is the valid subsequent designation (or otherwise) of *Sturnus carunculatus* Gmelin, 1789, by Vigors & Horsfield (1827) in the (as admitted by Bock, Schodde & Palma) 'landmark review' of Australian birds. The original passage concerned, in full, is as follows:

'As we consider our present group [*Anthochaera*] to have no relation to the Sturnidae beyond the unimportant analogical one of having in common with two or three species carunculated appendages to the head, we have no hesitation in removing it [*Anthochaera*] from the genus *Creadion*; leaving the *Sturnus carunculatus* (with which species however we must confess that we are unacquainted) to represent that group.'

Bock, Schodde & Palma quite correctly state that Article 67.5 requires that the fixation of type species 'be rigidly construed', with which we are in perfect accord. Their citation, however, of Article 67.5.1, in relation to the word 'represent' in the above would appear to be less than satisfactory, as clearly generic limitations *were* being drawn by Vigors & Horsfield at this point, and the statement is no mere 'mention of a species as an example of a genus'. We would contend, therefore, that far from not qualifying, this does indeed constitute a valid type species

designation under Article 69.1.1, with ‘represent’, within this context, being an ‘equivalent term’.

Neither can this be, moreover, an invalid type species fixation by elimination (Article 69.4) as then contended by the authors, as that proscribes the elimination of all but one of the originally included nominal species without, by implication, any statement concerning the fate of the remaining taxon, which clearly there is.

We would be grateful if the Commission would address the above concerns in their deliberations, and in coming to their conclusion regarding this case.

We have two final comments. Firstly, we agree with Bock, Schodde & Palma that the type species of *Anthochaera* was fixed by Gray (1840, p. 15). Secondly, we wish to point out that *Creadion* is neuter (transliterated from a Greek neuter noun) and that therefore uses of *Creadion carunculatum* and *C. rufusatrum* are all correct, as exemplified by Hoeven (1852–1856, *Handbuch der Zoologie*, p. 510), Pelzeln (1873, *Archiv für Naturgeschichte*, p. 52), and Wolters (1980, *Die Vogelarten der Erde* Lieferung 6, p. 448).

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I agree with the case presented by Bock, Schodde & Palma, and support their recommendations to the Commission in full.

(3) Checklist Committee, Ornithological Society of New Zealand; B.J. Gill (convener), B.D. Bell, G.K. Chambers, D.G. Medway, R.P. Scofield, A.J.D. Tennyson & T.H. Worthy.

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The Checklist Committee of the Ornithological Society of New Zealand Inc. supports the proposal of Bock et al. (Case 3499) to suppress the name *Creadion*, which was in the past applied incorrectly to the saddlebacks (CALLAEIDAE) and is open to application to the genus presently known as *Anthochaera*. We support this action to promote stability of Australasian bird names, including continued use of the name *Philesturnus* for New Zealand’s two species of saddlebacks. The Committee has in press a 4th edition of its checklist (OSNZ, 2010) in which *Philesturnus* will be used for the saddlebacks and the name *Anthochaera* for the Australian red wattlebird. We note that stability in bird names is as important as ever with the great current interest in birds for studies of molecular biology and the extensive use of scientific names of birds in DNA databases. (R.L. Palma is a member of the Checklist Committee but has excused himself from this letter as he is a co-author of Case 3499).

Additional reference

OSNZ (Ornithological Society of New Zealand) Checklist Committee. 2010 (in press). *Checklist of the birds of New Zealand, Norfolk and Macquarie Islands, and the Ross Dependency, Antarctica*. Ed. 4. Te Papa Press, Wellington, New Zealand.

Comments on the proposed precedence of *Procynosuchus* Broom, 1937 (Therapsida, Cynodontia) over *Cyrbasiodon* Broom, 1931 and *Parathrinaxodon* Parrington, 1936 (Case 3431; see BZN 66: 64–69, 188)

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I have been working on cynodonts for several years. The name *Cyrbasiodon* is long forgotten and only *Procynosuchus* is widely used by all known researchers. I support the use of *Procynosuchus* instead of *Cyrbasiodon*.

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This comment is sent for the purpose of offering complete support for the conservation of the generic name *Procynosuchus* Broom, 1937 (Case 3431) for a well-known group of basal non-mammalian cynodonts, instead of using the older, poorly known names *Cyrbasiodon* Broom, 1931 or *Parathrinaxodon* Broom, 1936. As someone who has worked on non-mammalian cynodonts, I can vouch that the name *Procynosuchus* is well established in the literature and publications on this taxon continue to appear on a regular basis. In contrast, *Cyrbasiodon* and *Parathrinaxodon* are obscure taxon names and have only rarely appeared in the literature since their inception. Formally recognising that *Procynosuchus* is a junior synonym of *Cyrbasiodon* or *Parathrinaxodon*, although following the Code, would cause extreme confusion, not only for those working in the field, but particularly for non-specialists such as science writers and textbook authors. I thus give my strong support for the conservation of the generic name *Procynosuchus* Broom, 1937.

Comment on the proposed conservation of usage of *Cuvieronius* Osborn, 1923

(Mammalia, Proboscidea)

(Case 3479; see BZN 66: 265–270)

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I agree with Lucas's arguments for establishing *Mastotherium hyodon* as the type species for *Cuvieronius*. The two original teeth described in Cuvier (1806) are difficult to place in two separate taxa, and probably represent one taxon. Also, it is impossible to distinguish isolated teeth of *Cuvieronius* and *Haplomastodon*. It is also apparent that the late 19th and early 20th century distinction of two separate species, *Mastodon andium* and *Mastodon humboldtii*, based on geography, was flawed. *Mastotherium hyodon* is indeed the oldest binomen, although Osborn (1923, 1926)

was the first to name a type species for *Cuvieronius*, using *Mastotherium humboldtii*. When Cabrera (1929) considered *Cordillerion* a junior synonym of *Cuvieronius* he erroneously chose *Mastotherium hyodon* as the type species for *Cuvieronius* instead of the correct *Mastodon humboldtii*. Subsequently most studies since then have used *Cuvieronius hyodon* as the type species. Although Ficarelli et al. (1995) was correct in designating specimen MNHN TAR 1270 as the holotype for *C. tarijensis* since it was the first identifiable holotype, the long usage of *C. hyodon* merits some consideration. Given the confusion and complexity in the history of the nomenclature for *Cuvieronius* and the inadequate type specimen it makes sense to designate an acceptable neotype that exemplifies the genus. I believe that the original molar described by Cuvier (1806) and given the binomen *Mastotherium hyodon* by Fischer (1814) could still be assigned to *Cuvieronius* as geographical distribution should not weigh heavily on determining taxa. Thus, establishing *Mastotherium hyodon* as the type species, and MNHN TAR 1270 as a neotype is a plausible solution that will ensure stability. Consequently, *C. tarijensis* becomes a junior synonym.

Comment on the proposed conservation of usage of *Mastodon waringi* Holland, 1920 (currently *Haplomastodon waringi*; Mammalia, Proboscidea) by designation of a neotype

(Case 3480; see BZN 66: 164–167, 358–359)

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I agree with Spencer G. Lucas for the following reasons: a neotype needs to be established since the original specimens, from previous types (*M. chimborazi* and *M. waringi*), are now lost or lacking some of the original material. And, given the close relationship and similarities with other South American proboscideans, a neotype such as MECN 82, 83, 84, and 133 is needed. The skull and enamel-free, upward curving tusks of *Haplomastodon* with little or no spiralling are the main characteristics separating it from *Stegomastodon* and *Cuvieronius*. Although *Mastodon waringi* is the oldest name for specimens now referred to *Haplomastodon* (Holland, 1920), based on an incomplete jaw and tusk fragment (CM 11033), the current fragmentary nature of the specimen makes it problematic for distinguishing them from other genera. Hoffstetter (1950), believing Holland's specimen wasn't complete enough to warrant type status, designated *M. chimborazi* as type species of *Haplomastodon* based on a skull, which was subsequently lost in a fire.

Through this confusion *H. waringi* has been used as the type species of the genus by most workers since Hoffstetter. Although this is incorrect, as long as *H. chimborazi* is maintained as a junior subjective synonym it seems practical to continue using this long-used binomen, since it is the oldest and most widely used.

OPINION 2241 (Case 3377)***Ataenius* Harold, 1867 (Insecta, Coleoptera): precedence given over *Aphodinus* Motschulsky, 1862**

Abstract. The Commission has ruled that the generic name *Ataenius* Harold, 1867 is conserved for a world-wide and well-known genus of scarab beetles (family SCARABAEIDAE) by giving it precedence over the older name *Aphodinus* Motschulsky, 1862.

Keywords. Nomenclature; taxonomy; Coleoptera; SCARABAEIDAE; *Ataenius*; *Aphodinus*; *Ataenius scutellaris*; *Aphodinus castanicolor*; scarab beetles; world-wide.

Ruling

- (1) Under the plenary power it is hereby ruled that the name *Ataenius* Harold, 1867 is given precedence over the name *Aphodinus* Motschulsky, 1862, whenever the two are considered to be synonyms.
- (2) The following names are hereby placed on the Official List of Generic Names in Zoology:
 - (a) *Ataenius* Harold, 1867 (gender: masculine), type species by subsequent designation by Chapin (1940, p. 12) *Ataenius scutellaris* Harold, 1867, with the endorsement that it is to be given precedence over the name *Aphodinus* Motschulsky, 1862 whenever the two are considered to be synonyms;
 - (b) *Aphodinus* Motschulsky, 1862 (gender: masculine), type species by subsequent designation by Dellacasa, Bordat & Dellacasa (2001) *Aphodius castanicolor* Motschulsky, 1858, with the endorsement that it is not to be given priority over the name *Ataenius* Harold, 1867 whenever the two are considered to be synonyms.
- (3) The following names are hereby placed on the Official List of Specific Names in Zoology:
 - (a) *scutellaris* Harold, 1867, as published in the binomen *Ataenius scutellaris* (specific name of the type species of *Ataenius* Harold, 1867);
 - (b) *castanicolor* Motschulsky, 1858, as published in the binomen *Aphodius castanicolor* (specific name of the type species of *Aphodinus* Motschulsky, 1862).

History of Case 3377

An application to conserve the generic name *Ataenius* Harold, 1867 over *Aphodinus* Motschulsky, 1862 was received from Henry F. Howden (*Canadian Museum of Nature, Ottawa, Canada*) and Aleš Smetana (*Agriculture and Agri-Food Canada, Biosystematics, Ottawa, Canada*) on 20 February 2006. After correspondence the case was published in BZN 64: 39–42 (March 2007). The title, abstract and keywords of the case were published on the Commission's website. Three comments in support were published in BZN 64(2): 123, 65(4): 307–309 (including an additional set of proposals) and 66(1): 72–76, with a correction.

On 1 December 2007 the members of the Commission were invited to vote on the proposals published in BZN 64: 40. A majority of Commissioners voted FOR the case but it failed to reach the two-thirds majority required for approval. In accordance with the Bylaws the case was sent for a revote on 1 September 2008, but

was suspended following correspondence with the Commissioners and pending publication of comments (BZN 65(4) and 66(1)).

Decision of the Commission

On 1 June 2009 the members of the Commission were invited to vote on the two sets of proposals, the first submitted in BZN 64: 40, the second in BZN 65: 308. At the close of the voting period on 1 September 2009 the votes were as follows:

Set of proposals in BZN 64: 40:

Affirmative votes – 19: Alonso-Zarazaga, Ballerio, Brothers, Fautin, Grygier, Halliday, Harvey, Kojima, Krell, Lamas, Minelli, Papp, Patterson, Rosenberg, Štys, van Tol, Yanega, Zhang and Zhou.

Negative votes – 6: Bogutskaya, Bouchet, Kullander, Ng, Pape and Winston.

Lim abstained. No vote was received from Kottelat. Pyle was on leave of absence.

Set of additional proposals in BZN 65: 308:

Affirmative votes – 9: Brothers, Harvey, Kojima, Ng, Pape, Papp, Štys, Winston and Zhang.

Negative votes – 14: Alonso-Zarazaga, Ballerio, Bouchet, Fautin, Grygier, Kottelat, Krell, Kullander, Lamas, Minelli, Patterson, Rosenberg, van Tol and Yanega,

Bogutskaya, Halliday and Lim abstained. No vote was received from Zhou. Pyle was on leave of absence.

Fautin, voting FOR the first set of proposals and AGAINST the second set, said that the comments, which were all favoring the first set of proposals, made a persuasive case that instability would be induced by suppressing the senior name. She felt that the additional proposal by Branco & Dellacasa appeared to be unnecessary; she suggested that if they disagreed, they should submit a formal case. Halliday said he voted FOR the first set of proposals, as modified to record that the type species of *Ataenius* was designated by Chapin (1940). He said he ABSTAINED from voting on the second set of additional proposals by Branco & Dellacasa as they introduce some completely new concepts and names that were not included in the original case. Therefore they can not be considered simply as modifications of the original case, but should be considered as a new and separate case.

Bouchet, voting AGAINST both sets of proposals, said that both agreed on the conditional reversal of precedence of *Ataenius* over *Aphodinus*. He saw this as a technical solution that prolongs nomenclatural instability, and thus he voted against it. Kullander, voting AGAINST said he saw no reason to change his vote from consideration of the original set of proposals.

Original references

The following are the original references to the names placed on Official Lists by the rulings given in the present Opinion:

Aphodinus Motschulsky, 1862, *Études Entomologiques*, vol. 11, p. 55.

Ataenius Harold, 1867, *Coleopterologische Hefte*, 1: 82.

castanicolor, *Aphodius*, Motschulsky, 1858, *Études Entomologiques*, vol. 7, p. 54

scutellaris, *Ataenius*, Harold, 1867, *Coleopterologische Hefte*, 1: 82

The following is the reference for the designation of *Ataenius scutellaris* Harold, 1867 as the type species of *Ataenius* Harold, 1867:

Chapin, E.A. 1940. *Proceedings of the United States National Museum*, 89: 12.

OPINION 2242 (Case 3398)**AULACOSCELINAE Chapuis, 1874 (Insecta, Coleoptera, ORSODACNIDAE or CHRYSOMELIDAE): name not conserved**

Abstract. The Commission did not support a proposal to conserve the names AULACOSCELINI Chapuis, 1874 and AULACOSCELINAE Chapuis, 1874 for a group of Coleoptera currently placed in the ORSODACNIDAE Thomson, 1859 (traditionally placed in the CHRYSOMELIDAE Latreille, 1802) by ruling that the stem of the generic name *Aulacoscelis* is *Aulacoscel-*.

Keywords. Nomenclature; taxonomy; Coleoptera; AULACOSCELINAE; AULACOSCELIDINAE; *Aulacoscelis*; Neotropical; southern U.S.A.

Ruling

- (1) A proposal for conservation of the names AULACOSCELINI Chapuis, 1874 and AULACOSCELINAE Chapuis, 1874 by ruling that the stem of the generic name *Aulacoscelis* is *Aulacoscel-* was not approved.
- (2) No names are placed on Official Lists or Indexes.

History of Case 3398

An application to conserve the names AULACOSCELINI Chapuis, 1874 and AULACOSCELINAE for *Aulacoscelites* Chapuis, 1874 for a group of Coleoptera currently placed in the ORSODACNIDAE Thomson, 1859 (traditionally placed in the CHRYSOMELIDAE Latreille, 1802) was received from Jorge A. Santiago-Blay (*National Museum of Natural History, Smithsonian Institution, Washington D.C., U.S.A.*) on 25 September 2006. There are two spellings currently used for this group of beetles, AULACOSCELINAE and AULACOSCELIDINAE. Although AULACOSCELIDINAE appears to be grammatically correct, AULACOSCELINAE has been in prevailing usage for the last 55 years and was in sole use for 37 years, from 1953 to 1990. After correspondence the case was published in BZN 65: 97–105 (June 2008). The title, abstract and keywords of the case were published on the Commission's website. A comment supportive of this case was published in BZN 66: 72. One adverse comment was published in BZN 66: 168.

Decision of the Commission

On 1 June 2009 the members of the Commission were invited to vote on the proposals published in BZN 65: 100. At the close of the voting period on 1 September 2009 the votes were as follows:

Affirmative votes – 12: Brothers, Fautin, Halliday, Harvey, Lamas, Lim, Ng, Papp, Rosenberg, Winston, Yanega and Zhou.

Negative votes – 15: Alonso-Zarazaga, Ballerio, Bogutskaya, Bouchet, Grygier, Kojima, Kottelat, Krell, Kullander, Minelli, Pape, Patterson, Stys, van Tol and Zhang,

Pyle was on leave of absence.

Alonso-Zarazaga, voting AGAINST the proposals, provided an extended explanation of how the application suffers inconsistencies in the understanding of stem- and ending-formation and of Greek word formation and use. The long discussion of the first part of the genus name *Aulacoscelis* is superfluous, since this is not important for the zoological stem formation. The second part, *skelis*, is treated as a single word, trying to match it with the meaning of *sxelis* (using the Beta Code Romanisation as apparently the author does). The word *sxelis* means, as correctly said, ‘ribs of beef’ and has nothing to do with *Aulacoscelis*. The origin of *skelis* here is the following: *skelos* (leg) and suffix *-ís* (genitive *-ídos*), a common one in Ancient Greek to obtain feminine derivatives from masculine nouns, amongst them, many animal names, and to indicate small size, both things applying to *Aulacoscelis* (Buck & Petersen, 1944, p. 416), being the sense small animal with furrowed legs ‘or just ‘furrowed little legs’. Alonso-Zarazaga’s interpretation was supported by some other Greek words, like *onoskelis*, *pygoskelis*, *periskelis* or *triskelis*, composed in the same way. Thus the only correct genitive is *Aulacoscelidos*, and the separation of the ending *-os*, gives the zoological stem, *Aulacoscelid-*. Moreover, the data presented to delimit usage are incomplete. Monrós (1959, p. 18) already used the corrected spelling AULACOSCELIDINAE, a seminal work overlooked by the author of the application. This spelling was later shown again by Seeno & Wilcox (1982, p. 8) when reviewing Monrós’ nomenclature. Under the spelling AULACOSCELIDIDAE, it was used by Bechyné (1980, p. 52). Thus it turns out that the author who latinised Chapuis’ name incorrectly was the same who published the corrected version the first time, which was 30 years before the date shown by the author of the application. Since the author cannot demonstrate a real ‘prevailing usage’ and the correction was done as early as 1960, he felt he had to vote against the proposals.

Bouchet, voting AGAINST, said that AULACOSCELIDINAE is the grammatically correct form of the name, which, by the applicant’s own admission, has become ‘more widely used’ in the last decade or so. Bouchet thus did not think the application was well founded, and voted in favor of the spelling AULACOSCELIDINAE. Grygier, voting AGAINST, explained that in order to demonstrate ‘prevailing usage’, the present Application starts its author-count in 1953. It might provide a fairer test to start in 1990, when the ‘correct’ spelling AULACOSCELIDINAE first appeared, if, as is true here, a substantial number of relevant works by various authors have been published since then. AULACOSCELINAE has been used by 16 different individual authors since 1990, according to the citations given, and AULACOSCELIDINAE by 18. There is clearly no ‘prevailing usage’ among these ‘most recent’ authors, and thus the grammatically correct name should prevail. Kojima, voting AGAINST, also pointed out that the name AULACOSCELIDINAE is grammatically correct and has been becoming the most prevailingly used name from the early 2000’s. The name AULACOSCELINAE is grammatically incorrect and although it was in prevailing usage before the early 2000’s, it is now falling behind. Under such situations, there seems to be no reason to use the plenary power to conserve the name AULACOSCELINAE. Kottelat, voting AGAINST the proposals, said that if the correct spelling is now becoming increasingly used, he does not see any justification for adhering to the incorrect spelling. Continued use of the correct spelling leads to stability. Also voting AGAINST, Kullander said that under the present Code, where one grammatically correct and one grammatically incorrect spelling are used, it is definitely better to select the correct spelling, in this

case, AULACOSCELIDINAE. He felt that this kind of application should not become a case for Commission consideration. He further commented that the present rules on family-group names seem to have run havoc. Stys, voting AGAINST, also said that AULACOSCELIDINAE is grammatically correct and recently generally used. He also felt that this is just a trivial situation for which unequivocal guidance should be given by the Code.

No names are placed on Official Lists or Indexes in this ruling.

Additional references

- Bechyné, J.** 1980. El jeannelismo y la evolución, concepto de las leyes orgánicas sin excepción. xiv, 182 pp. Grafindustrial Aragua S.R.L. Maracay.
- Buck, C.D. & Petersen, W.** 1944. *A reverse index of Greek nouns and adjectives arranged by terminations with brief historical introductions*. xvii, 765 pp. The University of Chicago Press, Chicago.
- Monrós, F.** 1959. Los géneros de Chrysomelidae. *Opera Lilloana*, 3: 1–337.
- Seenó, T.N. & Wilcox, J.A.** 1982. Leaf beetle genera (Coleoptera: Chrysomelidae). *Entomography*, 1: 1–221.

OPINION 2243 (Case 3439)***Xantholinus gracilis* Sperk, 1835 (currently *Scopaeus gracilis*; Insecta, Coleoptera): usage conserved by the designation of a neotype**

Abstract. The Commission has conserved usage of the specific name of the staphylinid beetle *Xantholinus gracilis* Sperk, 1835 (currently *Scopaeus gracilis*) by designation of a neotype.

Keywords. Nomenclature; taxonomy; *Scopaeus*; *Scopaeus gracilis*; staphylinid beetle; Palaearctic.

Ruling

- (1) Under the plenary power it is hereby ruled that all previous type fixations for *Xantholinus gracilis* are set aside and the male specimen mounted on a card with the aedeagus, tergite and sternite VIII, segment IX, and tergite X dissected and mounted on the same card, with beneath the card two labels as follows: Label 1: 'Greece, Central Macedonia/Sithonia: Sarti/10m/N 40°05'51" E 023°58'49"/06.07.2006, leg. J. Frisch'; Label 2: '*Scopaeus* Erichson 1839/*gracilis*/(Sperk 1835)/det. J. Frisch', deposited in the Natural History Museum of the Humboldt-University, Berlin, Germany, is designated as a neotype.
- (2) The name *gracilis* Sperk, 1835, as published in the binomen *Xantholinus gracilis* and as defined by the neotype designated in (1) above, is hereby placed on the Official List of Specific Names in Zoology, with the endorsement that the neotype designated by the Commission is to be retained as the name-bearing type should the original specimen be found.

History of Case 3439

An application to conserve the usage of the specific name of the staphylinid beetle *Xantholinus gracilis* Sperk, 1835 (currently *Scopaeus gracilis*) by designation of a neotype was received from Johannes Frisch (*Museum für Naturkunde der Humboldt-Universität, Berlin, Germany*) and Lee H. Herman (*American Museum of Natural History, New York, NY, U.S.A.*) on 6 September 2007. After correspondence the case was published in BZN 65: 106–109 (June 2008). The title, abstract and keywords of the case were published on the Commission's website. No comments were received on this case.

Decision of the Commission

On 1 June 2009 the members of the Commission were invited to vote on the proposals published in BZN 65: 107–108. At the close of the voting period on 1 September 2009 the votes were as follows:

Affirmative – 19: Alonso-Zarazaga, Ballerio, Bouchet, Brothers, Fautin, Halliday, Harvey, Krell, Kullander, Lamas, Lim, Minelli, Papp, Patterson, Rosenberg, van Tol, Winston, Yanega and Zhang.

Negative – 7: Bogutskaya, Grygier, Kojima, Kottelat, Ng, Pape and Štys.
Zhou abstained. Pyle was on leave of absence.

Kojima, voting AGAINST, said that he thought this application would make the situation more complicated. He felt that the authors should have firstly clearly stated whether *Xantholinus gracilis* is assigned to *Scopaeus*. The authors' statement 'these characters [in the original description of *Xantholinus gracilis*] do not exist in *Scopaeus*' implied that they do not consider *Xantholinus gracilis* to be assigned to *Scopaeus*. If *Xantholinus gracilis* is not assigned to *Scopaeus* and if *Scopaeus erichsonii* is a synonym of *Scopaeus gracilis* as currently understood, *Scopaeus erichsonii* would be used as the valid name for the species currently recognised under the name *Scopaeus gracilis*.

Kottelat, voting AGAINST, said that the application did not mention how using the name for a species with the originally described characters would affect stability. He asked who would be affected besides taxonomists? The occasional change of a name to accommodate new taxonomic observations is routine and should not disturb taxonomists.

Ng, voting AGAINST, said he did not feel the argument for any change causing instability had been sufficiently made, nor did he sense the need to place the original name on the list of rejected names. He said there has been some past taxonomic confusion, but now a new understanding that requires the recognition of two taxa. He did not think it was a problem that the better known taxon needs to have its name changed.

Štys, voting AGAINST, said he could not support the suggested fixation of a neotype. He explained that this was a case with a change in the concept of a species for which the holotype was lost but which was apparently morphologically and ecologically different. He felt the proposal made a concomitant drastic change in the type locality that would be unwarranted in the long-term. He felt that the short-term advantages in maintenance of an obviously incorrect name should be regarded subservient to the stability of nomenclature based on priority.

Original references

The following is the original reference to the name placed on an Official List by the ruling given in the present Opinion:

gracilis, *Xantholinus*, Sperk, 1835, *Bulletin de la Société Impériale des Naturalistes de Moscou*, 8: 152.

OPINION 2244 (Case 3443)***Tentyria* Latreille, 1802 (Coleoptera, TENEBRIONIDAE): usage conserved**

Abstract. The Commission conserved the usage of the generic name *Tentyria* Latreille, 1802 by designation of *Tentyria ligurica* Solier, 1835 as the type species of this genus of darkling beetles from the Palaearctic region.

Keywords. Nomenclature; Coleoptera; TENEBRIONIDAE; TENTYRIINI; *Tentyria*; *Tentyrina*; *Tentyria ligurica*; *Tentyrina orbiculata*; darkling beetles; Palaearctic region.

Ruling

- (1) Under the plenary power it is hereby ruled that all previous fixations of type species for the nominal genus *Tentyria* Latreille, 1802 are set aside and *Tentyria ligurica* Solier, 1835 is hereby designated as the type species.
- (2) The following names are hereby placed on the Official List of Generic Names in Zoology:
 - (a) *Tentyria* Latreille, 1802 (gender: feminine), type species *Tentyria ligurica* Solier, 1835, as ruled in (1) above;
 - (b) *Tentyrina* Reitter, 1900 (gender: feminine), type species by subsequent designation by Gebien (1937) *Pimelia orbiculata* Fabricius, 1775.
- (3) The following names are hereby placed on the Official List of Specific Names in Zoology:
 - (a) *ligurica* Solier, 1835 as published in the binomen *Tentyria ligurica* (specific name of the type species of *Tentyria* Latreille, 1802), as designated in (1) above;
 - (b) *orbiculata* Fabricius, 1775, as published in the binomen *Pimelia orbiculata* (specific name of the type species of *Tentyrina* Reitter, 1900).

History of Case 3443

An application to conserve the usage of the generic name *Tentyria* Latreille, 1802 by designation of *Tentyria ligurica* Solier, 1835 as the type species of this genus of darkling beetles from the Palaearctic region was received from Patrice Bouchard (*Canadian National Collection of Insects, Arachnids and Nematodes, Agriculture and Agri-Food Canada, Ottawa, Ontario, Canada*), Ivan Löbl (*Muséum d'Histoire Naturelle, Geneva, Switzerland*) and Martin Lillig (*Institut für Biogeographie, Basel, Switzerland*) on 8 November 2007. After correspondence the case was published in BZN **65**: 110–113 (June 2008). The title, abstract and keywords of the case were published on the Commission's website. No comments were received on this case.

Decision of the Commission

On 1 June 2009 the members of the Commission were invited to vote on the proposals published in BZN **65**: 112. At the close of the voting period on 1 September 2009 the votes were as follows:

Affirmative votes – 19: Alonso-Zarazaga, Ballerio, Bouchet, Brothers, Fautin, Grygier, Halliday, Harvey, Kottelat, Krell, Lamas, Minelli, Papp, Rosenberg, Štys, Winston, Yanega, Zhang and Zhou.

Negative votes – 7: Bogutskaya, Kullander, Lim, Ng, Pape, Patterson and van Tol. Kojima abstained. Pyle was on leave of absence.

Kojima, who ABSTAINED, said that the taxonomic problem that will result in synonymising *Tentyrina* under *Tentyria* should have been more clearly presented in the case. Tol, voting AGAINST, said that the objective synonymy of *Tentyria* Latreille and *Tentyrina* Reitter, based on the same type species, is to be preferred above the selection of *T. ligurica* Solier as the type species of *Tentyria* as this species was originally not included in *Tentyria*.

Original references

The following are the original references to the names placed on Official Lists by the ruling given in the present Opinion:

ligurica, *Tentyria*, Solier, 1835, *Annales de la Société Entomologique de France*, **4**, p. 324.

orbiculata, *Pimelia*, Fabricius, 1775, *Systema entomologiae, sistens insectorum classes, ordines, genera, species, adiectis synonymis, locis, descriptionibus, observationibus*, p. 253.

Tentyria Latreille, 1802, *Histoire naturelle, générale et particulière, des crustacés et des insectes. Ouvrage faisant suite à l'histoire naturelle générale et particulière, composée par Leclerc de Buffon, et rédigée par C. S. Sonnini, membre de plusieurs sociétés savantes. Familles naturelles des genres. Tome troisième*, p. 170.

Tentyrina Reitter, 1900, *Bestimmungs-Tabelle der Tenebrioniden-Abtheilungen: Tentyrini und Adelostomini, aus Europa und angrenzenden Ländern*, p. 92.

OPINION 2245 (Case 3407)***Drosophila* Fallén, 1823 (Insecta, Diptera): *Drosophila funebris* Fabricius, 1787 is maintained as the type species**

Abstract. An application to conserve the current usage of the widely used name *Drosophila* Fallén, 1823 (a genus of flies widely used in biological research, particularly in genetics and developmental biology) in the face of potential taxonomic revision, by the designation of *Drosophila melanogaster* Meigen, 1830 (currently the type species of the subgenus *Sophophora* Sturtevant, 1939) as the type species of *Drosophila*, was not approved by the Commission. *Drosophila funebris* is maintained as the type species of the genus *Drosophila* Fallén, 1823.

Keywords. Nomenclature; taxonomy; DROSOPHILIDAE; *Drosophila*; *Sophophora*; *Drosophila melanogaster*; *Drosophila funebris*; fruit flies.

Ruling

- (1) It is hereby ruled that the type species fixation for *Drosophila* Fallén, 1823 is maintained.
- (2) No names are placed on Official Lists or Indexes and the issue is left open for subsequent workers to follow the precepts of the Code or to make new proposals to the Commission.

History of Case 3407

An application to designate *Drosophila melanogaster* Meigen, 1830 as the type species of *Drosophila* was received from Kim van der Linde (*Florida State University, Tallahassee, Florida, U.S.A.*), Gerhard Bächli (*Zoological Museum, Zürich, Switzerland*), Masanori J. Toda (*Institute of Low Temperature Science, Hokkaido University, Sapporo, Japan*), Wen-Xia Zhang (*College of Life Sciences, Peking University, Beijing, China*), Toru Katoh (*COE for Neo-Science of Natural History, Hokkaido University, Sapporo, Japan*), Yao-Guang Hu (*Institute of Low Temperature Science, Hokkaido University, Sapporo, Japan*) and Greg S. Spicer (*Department of Biology, San Francisco State University, San Francisco, California, U.S.A.*) on 19 January 2007. After correspondence the case was published in BZN **64**: 238–242 (December 2007). The title, abstract and keywords of the case were published on the Commission's website. Comments (three supporting, nine opposing and one additional reply from the authors of the application) were published in BZN **65**(1): 55–57; **65**(2): 137–150; **65**(3): 214–215; **65**(4): 304–307; **66**(1): 70–71 (with an additional proposal). A corrigendum was published in BZN **65**(1): 55.

Decision of the Commission

On 1 September 2009 the members of the Commission were invited to vote on the proposals published in BZN **64**: 240. At the close of the voting period on 1 December 2009 the votes were as follows:

Affirmative – 4: Bouchet, Krell, Papp and van Tol.

Negative – 23: Alonso-Zarazaga, Ballerio, Bogutskaya, Brothers, Fautin, Grygier, Halliday, Harvey, Kojima, Kottelat, Kullander, Lamas, Lim, Minelli, Ng, Pape, Patterson, Rosenberg, Štys, Winston, Yanega, Zhang and Zhou.

Pyle was on leave of absence.

Note from the Executive Secretary: As a result of the intensive scientific attention received by this case, Commissioners felt it was important to provide more extensive written commentary on the bases of their decisions than might otherwise be presented in an Opinion. The comments below have been only moderately edited for continuity and style; they are otherwise the transcripts of each Commissioner's explanation. In every other way we have treated this case in the same way as all other cases, following the processes outlined in the Code and prescribed by the Bylaws and Constitution.

Bouchet, voting FOR, explained that one did not change the name of an animal like *Drosophila melanogaster*, whatever arm-twisting and technical imperfections the original application may have had.

Krell, voting FOR, said his focus was not on the details in this case, or considerations of the stability of the currently preferred or most fashionable classification. His only concern was that the most frequently used animal name must remain unchanged to maintain stability in the scientific and wider world outside nomenclature. He agreed with one of the published Comments, which stated that there was no disadvantage in changing the type species of *Drosophila* to *melanogaster*. He felt that the occasional taxonomist might feel discomfort with breaching nomenclatural rules, however tens of thousands of scientists, journalists and other educated people might not comprehend that *Drosophila melanogaster* had to have a name change because somebody one hundred and fifty years ago chose one particular type species, and because of a formal rule of nomenclature that the type species had to be included in the genus when originally described. He felt that supporting this case best served the wider global interest.

Papp voting FOR, pointed out that he was currently the only Commissioner who had worked with drosophilids, including description of new species, and thus had known of the *Drosophila melanogaster* problem for around 35 years. He said that we all recognised that science, including *Drosophila* science, had been advancing throughout that time. On the other hand, we must admit that this nomenclature problem put a kind of a brake on the unavoidable splitting of the genus *Drosophila*, and thus did indeed restrict the freedom of taxonomic thought. Papp said that Dr van der Linde and co-authors were clear and modest in their request to the Commission. His vote FOR was cast in the firm conviction that the name *Drosophila melanogaster* was as important for mankind as that of *Homo sapiens*. Papp went on to explain that if the Commission voted against this case, two courses of action would be possible: van der Linde et al. would publish their taxonomic paper without the nomenclatural actions they proposed in Case 3407, but with the name changed from *D. melanogaster* to *Sophophora melanogaster*, or they would publish their paper without the names changed. If the latter course were taken, the problem would not be solved; its solution would only be postponed. The authors of Case 3407 or other researchers would make the split, because evidence would continue to accumulate and would force them to do so. He felt that the most probable scenario would be the same whether the results were published sooner or later: biologists of the world would continue using the name

Drosophila melanogaster. Papp promised that he would also continue using the name *Drosophila melanogaster*, and would encourage colleagues to do so. He went on to quote the Preamble to the Code (p. 2) 'The objects of the Code are to promote stability and universality in scientific names of animals All its provisions and recommendations are subservient to those ends and none restricts the freedom of taxonomic thought or actions.' and . . . 'When stability of nomenclature is threatened in an individual case, the strict application of the Code may under specified conditions be suspended by the International Commission on Zoological Nomenclature'. Papp then asked if there was any threat larger than change of a name used in thousands and thousands of scientific works. He concluded by saying he hoped he had managed to demonstrate that this was not a simple case for him. After an 'against' vote of the Commission, he would sooner or later find himself in a situation in which he would have to act in conflict with its decision.

Van Tol, voting FOR, provided some context, explaining that a few years ago van der Linde contacted him to discuss the results of her phylogenetic analysis of the genus *Drosophila*, and the consequences of splitting the genus for the name of the species known as *Drosophila melanogaster*. She considered it unlikely that the combination *Sophophora melanogaster* would ever be accepted by the biological community apart from taxonomists, and they discussed the options for preserving the combination *Drosophila melanogaster*. In his view there were only two options: (i) through classification, by defining a genus that included both the type species of *Drosophila* and the species *D. melanogaster*; and (ii) through nomenclature, most rigorously by designating *D. melanogaster* as type species of the genus *Drosophila*. Based on the phylogenetic analysis, she considered the solution as under (i) above not robust, and preferred a solution that would preserve the combination irrespective of classification. Although van Tol could not envisage the disruptive effects on the names of other taxa, designating *D. melanogaster* as the type species of *Drosophila* seemed to him the only permanent solution within the domain of nomenclature. Of course, he fully understood that the proposal would be both unconventional and controversial. Finally, he advised her to contact the community of dipterists and jointly submit an application to the Commission. He had given his technical advice as member of the Commission, without taking a position beforehand. He explained that he was basically very reluctant to change the status of generic names in any way. He agreed that there was usually no reason to believe that new combinations would not be accepted by professionals, be it for taxonomic or nomenclatural reasons, as this was the logical consequence of a system in which names reflected taxonomic opinions. This rule, however, had its limitations. Some names or name combinations were so widely used, that a name change would take an uncomfortably long time to be accepted, if ever. Under such circumstances, the Commission may and should use its Plenary Power. The present proposal deeply shook the fundamentals of the *International Code of Zoological Nomenclature*, as was duly explained in various comments, but the alternative had the serious risk that it would only be understood by taxonomists. No comment had convinced van Tol of unacceptable consequences in supporting the proposals.

Alonso-Zarazaga, voting AGAINST, agreed that as *D. melanogaster* was 'one of the world's most important model organisms', the name should be conserved for the sake of stability, but he felt that the authors of the case had not allowed the

community to have a healthy discussion of their proposals, since the 'detailed phylogenetic studies' mentioned in the case were still largely unpublished, and were thus hypothetical. Alonso-Zarazaga said that was not a matter for the Commission to rule in provision of future hypothetical problems and the Commission could not preclude the zoological community from discussing and perhaps finding some other solution. By pre-emptive ruling, he felt that the Commission would be 'infringing upon taxonomic judgement' (strictly prohibited in the Preface of the Code) by favouring only one possible taxonomic hypothesis. He did not see any problem for 'drosophila' to become a vernacular name for *Sophophora melanogaster*, as happened with many other names. He said that confusion in these cases was usually less than expected, since users tended to become habituated quickly. The number and contents of the adverse comments also showed that stability would not be achieved by a decision of the Commission taken today; a debate on the new taxonomic proposals should take place first. Furthermore, he felt that the acceptability of name changes for other widely used model *Drosophila* species had not been treated in the application. Alonso-Zarazaga suggested that this issue could be referred again to the Commission after a wide consensus on the systematic scenario had been reached by dipterists. He also objected to the suggested coercive implication in the authors' sentence 'if the Commission rules against our application, taxonomic revision of the genus *Drosophila* is effectively prevented' and said this was the authors' taxonomic problem as well. Alonso-Zarazaga also addressed Máca's (BZN 66(1): 70–71) comment on the name *D. funebris* and his suggestion of using *Spinulophila* Duda, 1923 over *Chaetodrosophilella* Duda, 1923 (mentioning 'page priority' which in actuality is not recognised in the Code) as genus name for *D. funebris*, in the case of *D. melanogaster* being designated as type species of *Drosophila* Fallén. He felt the suggestions were quite unsatisfactory and created more problems than they solved, since they left the status of *Oinopota* Kirby, 1815 in limbo. Alonso-Zarazaga said that if a genus was needed for *D. funebris* in the future, the best procedure would be to use the oldest name *Oinopota* by designating a neotype of *Musca cellaris* Linnaeus, 1758 conspecific with *M. funebris* Fabricius, 1787, and reversing species name priority under Article 23.9. *Musca cellaris* was not a nomen nudum and this action would also validate Macquart's (1835) subjective synonymy, that could be objective synonymy if the type specimen of *M. funebris* (if extant) were selected to be also the neotype of *M. cellaris*, thus avoiding any further problem with this name.

Ballerio, voting AGAINST, explained that he was concerned that supporting this Case would lead to requests for intervention by the Commission every time taxonomy threatened a famous name. He felt that nomenclatural stability was a good thing but should not interfere with taxonomic freedom in such a dramatic way. *Sophophora melanogaster*, if this new taxonomic arrangement proved to be stable, would make its way in the world and the clamour around this case would give it the exposure needed to bring it to public attention.

Bogutskaya, voting AGAINST, said she did so because: 1) she saw no reason to distinguish between a 'famous' name and an 'lesser known' name, for there was nothing in the Code regulating this. If the application were to be supported by the Commission it would be intervention on zoological nomenclature and scientific taxonomy; 2) preserving the genus+species combination *Drosophila melanogaster* would cause much more additional nomenclatural instability as it would result in

combinational changes for many (maybe over a thousand) other nominal species of *Drosophila* sensu lato; 3) until revision of the whole drosophilid group (maybe even wider) was done (which might take several revisions before taxonomic stability was approached, depending on methodologies and taxon sampling), the question was not 'ripe' enough to be sent to the Commission asking for such a drastic change; 4) she felt that the entire issue had been grossly exaggerated and that the rest of the biological community could and would respectfully accept and use data resulting from the research and rules of the taxonomic community; 5) finally, she saw no technical problems for referring to 'drosophila' that were formally placed in any genus – shared databases and web resources provided all necessary synonymy links for non-taxonomic users.

Brothers, voting AGAINST, agreed that this was recognised as a highly contentious issue. However, the absence of consensus on its solution, even amongst those working on the groups involved, indicated that action by the Commission to change an existing and properly designated type species would be unwise, especially since the consequential implications for other components of the current genus *Drosophila* had not been elaborated.

Fautin, voting AGAINST, said she was persuaded that ruling in favour of this application would create more instability than might be occasioned by a name change to *Sophophora melanogaster* because of the greater number of species in subgenera other than *Sophophora*. She raised the related matter that *D. melanogaster* was not the only species of fruit fly used in genetic research; among the others were those that would remain as *Drosophila* by turning down this application, whereas their generic names would have to be changed were the name *Drosophila* to be applied only to the clade containing *D. melanogaster*. Thus, Fautin felt that a name change would not result in lost information and confused scientists; it was an increasingly simple matter to do electronic searches that would return references to both *Sophophora melanogaster* and *Drosophila melanogaster*.

Grygier, voting AGAINST, said that the separation of the specific name *melanogaster* from the generic name *Drosophila* had not yet been proposed formally, but it appeared only to be a matter of time. The Commission had been asked to forestall such an event by making this nominal species the type species of this nominal genus. In his own field of carcinology, he had seen some regret at the loss of the familiar model-species binomens *Balanus balanoides* and *Balanus amphitrite*, as the result of the elevation to genus of many species groups of the barnacle genus *Balanus*. The two species were now classified in *Semibalanus* and *Amphibalanus*, respectively, and these in turn were currently in a different family and subfamily from *Balanus*. Suggestions had been made, first, to ignore the taxonomic 'splitters' above the level of subgenus and employ *Balanus* in perpetuity in an earlier, wider sense and scope, or second, not to propose or accept such taxonomic revisions until the phylogenetic relationships had been substantiated by multiple cladistic analyses based on sufficient morphological and molecular data. In either case, original binomens would remain in use, at least for a while. No suggestion had been made, however, to conserve either of these familiar binomens by making *B. balanoides* or *B. amphitrite* the type species of *Balanus* in place of *Balanus balanus*. In the present instance, Grygier would be in favour of suppressing any senior homonym or synonym of *D. melanogaster* so the species name was not lost. However, he felt that to preserve the entire genus/species combination, at the cost of

subgeneric (eventually generic) combinational changes for hundreds of other nominal species, was too much. He also felt that doing so might open the floodgates for similar proposals related to any number of other popular or model species, such as the mentioned barnacles, to reverse or forestall changes in their generic assignments.

Halliday explained that he voted AGAINST for several reasons. Firstly, the crux of the argument presented in the case was the statement that 'The paraphyletic nature of the genus *Drosophila* is unacceptable as it violates modern systematic practice'. This was a clear statement of the particular taxonomic philosophy that the authors had embraced. If the Commission ruled that the type species of *Drosophila* was *melanogaster* on the basis of this argument, that would imply endorsement of this taxonomic philosophy, and would represent an intolerable invasion of the taxonomic freedom of zoologists who adopted other taxonomic philosophies. Whether or not a taxon is paraphyletic was not a nomenclatural question, and therefore not a matter for the Commission to consider. Secondly, Halliday said that the authors' argument was based on a hypothetical phylogeny of *Drosophila* and related genera. This phylogeny was by no means generally accepted, and alternative phylogenetic hypotheses for the same group of taxa had appeared in recent literature. Different methods of data analysis and interpretation had produced different phylogenies, which had different consequences for classification and therefore nomenclature. It was clear that the whole group was in need of a comprehensive taxonomic revision, and until that revision was complete, it would be very premature for the Commission to take the dramatic action that had been proposed. Halliday felt that the Commission was being asked to make an extreme and unprecedented decision based on the results of a taxonomic revision that had not been published, in a classification that would continue to change and develop in the future as more taxa and new types of data were incorporated into the analysis. He felt he could not vote in favour of the proposed action while the taxonomic situation was still so unsettled. Thirdly, Halliday said that in the case and elsewhere, the authors suggested that the fact that *melanogaster* is not the type species of *Drosophila* somehow interfered with research on the taxonomy and comparative biology of the group; this argument could not be sustained. Even if all the genus and subgenus names were disregarded, and hypothetical monophyletic groups were given code numbers instead of names, scientific study of the group could continue completely unimpeded. Fourthly, Halliday said that if *melanogaster* were made the type species of *Drosophila* sensu stricto, that action would de-stabilise the names of hundreds of other species that were currently placed in other subgenera, many of which were themselves the subject of an extensive literature under their current names.

Harvey, voting AGAINST, said he felt that finding a solution to this complex case was exceedingly challenging. Designating *Drosophila melanogaster* as the type species of the genus would result in the transfer of numerous species to other genera and subgenera, but the retention of *D. funebris* as type species would see the most widely used biomedical organism change to *Sophophora melanogaster* under most taxonomic arrangements. Despite numerous and, in many cases, compelling disadvantages, he advocated that *D. funebris* should be retained as type species until a more robust solution was found. For example, the systematic position of those species currently in *Drosophila* sensu stricto would need to be resolved. He therefore voted against the case in its present form.

Kojima, voting AGAINST, said that this application tried to solve a problem that did not yet exist. The application asked the Commission to use its plenary power in order to conserve the name *melanogaster* in the binomen *Drosophila melanogaster* for the fruit fly called 'Drosophila', 'Drosophila melanogaster', 'drosophila', 'd. melanogaster' and so on, as a prerequisite for publication of a new classification system of the DROSOPHILIDAE by the authors of this proposal.

Kottelat, voting AGAINST, stated that whether a genus could be paraphyletic or not was irrelevant for nomenclature. Whether this 'violates modern systematic practices' was a subjective consideration and depended on an individual's scientific philosophy. To accommodate the results of an unpublished study, the Commission was asked to make a decision that affected the names of more than 1500 species. The application did not state how many species were placed in today's *Drosophila* sensu stricto. The 'drosophila' research model was not restricted to *D. melanogaster* but referred to several species, with an original focus for evolutionary studies. What made the model important was that it involved several species, and if these were now in several genera it did not weaken the model but made it more interesting. In that context the generic name of *D. melanogaster* was not really relevant. Other species were part of the model and not necessarily within *Sophophora*. The application did not mention how the other 'drosophila' model species would be affected by the proposed changes. Kottelat added that 'Drosophila' as commonly used was meant as a common name, not a scientific name. That 'drosophila' (lower case) was in the genus *Drosophila* or in *Sophophora* was not relevant and would not create more problems than the thousands of other names incorrectly used in non-taxonomic literature. He brought up what he thought to be a perfect parallel, the zebrafish (*Danio rerio*), another very widely used model organism, commonly referred to as 'danio' although placed in *Brachydanio* between about 1916 and 2005 (now returned to *Danio* by some researchers, though not accepted by all, also on the bases of new phylogenetic results). The fish *Trigonostigma heteromorpha* provided another example, as it was still considered as 'the rasbora' although removed from *Rasbora* for some time. Kottelat felt that the 'drosophila' problem was not a nomenclatural problem. It was for the concerned taxonomists to know if they wanted to have a large monophyletic *Drosophila* including several lineages, or if they preferred several smaller genera with hundreds of species changing names and *n* species of unknown generic position. Some had argued that the credibility of the Commission was at risk if it decided not to fix *melanogaster* as type species of *Drosophila*. Kottelat thought the opposite was the case, that independence and credibility were at risk if the Commission made decisions based on unpublished results. The comment 'If the Commission rules against our application, taxonomic revision of the genus *Drosophila* is effectively prevented' did not make sense to him. He failed to see why and how the fact that the type species of *Drosophila* was *funnebris* rather than *melanogaster* could prevent taxonomic revision. Nomenclature should not prevent a taxonomic revision (unless the word 'revision' was incorrectly used in this application).

Kullander, voting AGAINST, said that details of why this case should not be supported had been well explained in submitted Comments. He felt that the petitioners requested change of type species of a genus to fit their phylogeny. He mentioned that the case included a conditional argument, but would have preferred the authors found a solution without involving the Commission. He said he

considered '*Drosophila melanogaster*' to be more of a vernacular than scientific name for most people (commonly expressed as '*Drosophila*', '*D. melanogaster*'), and that if the claims of the authors were correct, the taxonomy of drosophilid flies had not been robust, so the name change had been a pending eventuality anyway. But, above all, he felt that this was a taxonomic issue, and the Commission could not alter names to fit a particular classification.

Minelli, voting AGAINST, noted that '*Drosophila melanogaster*' was likely to be perceived by most people, including some biologists who did not care for taxonomy, as 'the' name of the species, without distinctly perceiving, or caring to distinguish, whether this meant the scientific, or the vernacular name. This was simply its name, and such it would remain, any possible change of the scientific name notwithstanding. In addition, there was a procedural problem, as the Commission had been asked in this case to vote on the eventual consequences of a potential change of generic assignment, rather than on an objective difficulty caused by conflict between current use and a strict application of the Code, and voting now, i.e. before a taxonomic decision had been actually taken in print, would equate to infringing the principle of freedom of thought in taxonomic matters.

Ng, said his vote for this case was emphatically AGAINST. He had discussed this matter at length with many entomologists and dipteran experts, and most experts did not see the real need for the proposed action. They noted that the systematics, phylogeny and ideas would continue to evolve, and many did not have problems referring to these flies technically under a different genus name, but calling them '*Drosophila*' as a common name. The situation would become not unlike that of tilapia. If their opinions had been more unanimous or stronger, Ng said he might have been swayed, but they were not. He agreed that '*Drosophila*' was an extremely widely used name. But to have the Commission change the type species in this case because of the reasons stated would, in his opinion, open a Pandora's Box and reflect badly on the central tenets of the Code. He felt that the Commission should not influence the nature of scientific investigations, which was a risk from the proposed actions in this case. Ng said he did realise that some biologists would use this ruling to criticise the Commission and Code, arguing that it was unable to respond to the needs of biology and biologists. But he felt strongly that by responding positively to one group, another group would inevitably be annoyed, and the Commission would send out a message that the 'hypothesis of one era' (which was what he felt the proposals presented in this case were, after all) decided how a species should be named. Ng did not believe nomenclatural stability would be served if the Commission overrode the Principle of Priority in this case.

Pape, voting AGAINST, explained that genera represented one level in a nested set of ranks – the Linnaean classification – and, as such, they were subjective constructs of the human mind. He said we created names to facilitate our communication about them. The Code enabled us to determine which of the existing genus-group names would be the valid name under particular taxonomic circumstances. Case 3407 sought to ensure that possible differences in taxonomic opinion would not affect the name of one particular species: *Drosophila melanogaster*. As such, the case rested upon an anticipated adoption of a changed classification and the confusion and instability this might create. However, he stated that the Commission should not decide on what special classification or systematic approach was 'correct' or

‘superior’, nor should it be influenced by particular (existing or anticipated) scientific hypotheses or scientific paradigms.

Patterson, voting AGAINST, said that the authors and some commentators confirmed that there were taxonomic solutions to their dilemma that would avoid the necessity of an extraordinary action by the Commission and the destabilisation of the names of other species currently located within the genus.

Rosenberg, voting AGAINST, said he would have voted FOR only if the fly community was united in supporting the application. He felt that even if both names, *Sophophora melanogaster* and *Drosophila melanogaster* were in use, neither was ambiguous, and little confusion was likely to result.

Štys, voting AGAINST, reminded the Commission that his objections to the case were presented in a Comment (BZN 65: 144–145). In summary, the major reasons were: (1) Nomenclature must not be subservient to taxonomy and should retain its independence; (2) The Commission should not be used to promote any particular opinion on classification and any particular taxonomic philosophy and methodology; (3) The present application is premature as it concerns a situation which is far from being taxonomically and phylogenetically resolved and is not fully testable from published data. The proposal suggested a solution for only part of a complex problem and ignored the chaos resulting from its implementation in the rest of the taxon (*Drosophila sensu lato*, DROSOPHILIDAE). He felt that the arguments for treating the binomen *Drosophila melanogaster* as sacrosanct were purely based on quantitative current use, and had in the background the notion that the biologists, database managers, the general public and other stakeholders could not cope with a potential switch from *Drosophila melanogaster* to *Sophophora melanogaster*. He cautioned that the possibility of preserving the established usage of names, although invoked in the case, had never been intended to interfere with taxonomic progress.

Winston, voting AGAINST, felt this was a very challenging situation in that ideally the taxonomy of *Drosophila* should have been worked out before requesting Commission action, but she acknowledged that the ubiquity of the name *D. melanogaster* presented pitfalls for that approach as well.

Yanega, voting AGAINST, provided a detailed explanation, starting with the basic outline that *Musca funebris* was the type species of *Drosophila*, and *melanogaster* was the type species of *Sophophora*. Furthermore, *Sophophora* and *Drosophila* were not synonyms in van der Linde’s analysis; they were separate clades, with entirely different constituent species. He felt, therefore, that there was thus neither a nomenclatural nor a taxonomic problem to be resolved. Yanega noted that this application nevertheless asked that *Sophophora* and *Drosophila* be declared synonyms simply by designating the type species of the former as the type species of the latter. He said that the only reason to do so was if it was felt that nomenclature must be changed – not to suit taxonomic opinion (because no one was claiming that *Sophophora* and *Drosophila* were synonyms) – but to suit taxonomic convenience. Taxonomic opinion indicated that these were separate clades, but the authors asked the Commission to switch the names around, because it was inconvenient that the clade containing *melanogaster* was not the clade named *Drosophila*. Regardless of how well known the name, he felt this was flimsy justification for a major Commission action. In addition, there were a great many species in the subgenus *Drosophila*, including the present type species, which would require a new (sub)generic name, as

the membership of *Drosophila* would become that of the present membership of *Sophophora*. Yanega explained further that he had looked to other cases where plenary power had been invoked, and was unaware of any where the type species of one supraspecific taxon (in this case a subgenus) was set aside in favour of the type species of another supraspecific taxon with which it was not synonymous. In the present case, *melanogaster* was not only technically ineligible to be the type of *Drosophila*, as it was not an 'originally included species', but it was not even considered a member of that same higher taxon. It appears that many, if not most, cases of the exercise of plenary power to conserve names are cases where a newer name for the same taxon was chosen in favour of a name not in common use which proved to be older, or where a name that was shown to be a junior homonym was preserved over a senior homonym. Priority and homonymy are nomenclatural problems, but Yanega felt the present case was not. All of these points ran counter to the underlying objective of stability, as he understood it, and therefore ran counter to his understanding of the purpose of the plenary power. He agreed with using the plenary power to preserve a familiar genus name or an epithet, but he did not agree with using it to preserve a single combination (and, in doing so, destroying many other combinations that would otherwise remain intact). He felt that extrapolating the concept of stability to encompass name combinations was beyond the intent of the Code.

Zhang, voting AGAINST, emphasised that his vote against the proposal did not mean that he did not support the stability of the names of important species such as *Drosophila melanogaster*; in fact, he would prefer to see no changes to names of iconic species such as this. The application asked the Commission, prematurely in his view, to vote for a proposal to preserve the combination '*Drosophila melanogaster*' when there were neither compelling nomenclatural, nor taxonomic/phylogenetic justifications to change it.

Zhou, voting AGAINST, said that plenary power should not be used to solve a nomenclatural problem resulting from unpublished taxonomic results.

OPINION 2246 (Case 3461)**ANCYLINI Michener, 1944 (Insecta, Hymenoptera): spelling emended to ANCYLAINI to remove homonymy with ANCYLINI Rafinesque, 1815 (Mollusca, Gastropoda)**

Abstract. The Commission has ruled that the stem of the generic name *Ancyla* Lepeletier de Saint Fargeau, 1841, on which the hymenopteran family-group name ANCYLINI Michener, 1944 is based, is *Ancyla*-, to give ANCYLAINI, thereby removing the homonymy with ANCYLINI Rafinesque, 1815 (Mollusca, Gastropoda, based on *Ancylus* Müller, 1774).

Keywords. Nomenclature; taxonomy; Hymenoptera; Gastropoda; ANCYLINI; ANCYLAINI; *Ancyla*; *Ancylus*; *Ancyla oraniensis*; *Ancylus fluviatilis*; bees; freshwater limpets; Palearctic; cosmopolitan.

Ruling:

- (1) Under the plenary power it is hereby ruled that the stem of the generic name *Ancyla* Lepeletier de Saint Fargeau, 1841 is *Ancyla*-;
- (2) The name *Ancyla* Lepeletier de Saint Fargeau, 1841 (gender: feminine), type species by monotypy *Ancyla oraniensis* Lepeletier de Saint Fargeau, 1841 is hereby placed on the Official List of Generic Names in Zoology.
- (3) The name *oraniensis* Lepeletier de Saint Fargeau, 1841, as published in the binomen *Ancyla oraniensis* (specific name of the type species of *Ancyla* Lepeletier de Saint Fargeau, 1841) is hereby placed on the Official List of Specific Names in Zoology.
- (4) The name ANCYLAINI Michener, 1944, type genus *Ancyla* Lepeletier de Saint Fargeau, 1841 (spelling emended by the ruling in (1) above) is hereby placed on the Official List of Family-Group Names in Zoology.
- (5) The name ANCYLINI Michener, 1944 (an incorrect original spelling of ANCYLAINI Michener, 1944, as ruled in (1) above) (Hymenoptera) is hereby placed on the Official Index of Rejected and Invalid Family-Group Names in Zoology.

History of Case 3377

An application to remove homonymy of ANCYLINI Michener, 1944 (Insecta, Hymenoptera) with ANCYLINI Rafinesque, 1815 (Mollusca, Gastropoda), by ruling that the stem of the generic name *Ancyla* Lepeletier de Saint Fargeau, 1841 on which the hymenopteran family-group name is based is *Ancyla*-, was received from Michael S. Engel (*Natural History Museum, and Department of Ecology & Evolutionary Biology, University of Kansas, Lawrence, KS, U.S.A.*), John S. Ascher (*American Museum of Natural History, New York, NY, U.S.A.*) and Douglas A. Yanega (*Entomology Research Museum, University of California, Riverside, CA, U.S.A.*) on 4 April 2008. After correspondence the case was published in BZN 65: 198–201 (September 2008). The title, abstract and keywords of the case were published on the Commission's website. No comments were received on this case.

Decision of the Commission

On 1 September 2009 the members of the Commission were invited to vote on the proposals published in BZN **65**: 199–200. At the close of the voting period on 1 December 2009 the votes were as follows:

Affirmative votes – 26: Alonso-Zarazaga, Ballerio, Bogutskaya, Bouchet, Brothers, Fautin, Grygier, Halliday, Harvey, Kojima, Kottelat, Krell, Kullander, Lamas, Lim, Minelli, Ng, Pape, Papp, Patterson, Rosenberg, Štys, van Tol, Winston, Zhang and Zhou.

Negative votes – 0.

Yanega abstained. Pyle was on leave of absence.

Alonso-Zarazaga, voting FOR, observed that the correct name for the lepidopteran family-group (a third homonym mentioned in the application) is ANCYLIDINI, since the stem of *Ancylis* is *Ancylid-*, thus ANCYLIDINI does not compete for homonymy with any of the names mentioned in the application. Similarly, Kullander, voting FOR, said that *Ancylis* gives *Ancylid-*, not *Ancyl-*, so a family name based on *Ancylis* would be ANCYLIDIDAE and not a homonym of ANCYLIDAE. Also voting FOR, Grygier said that this Case should have been brought under Article 55.3.1, which directs the present sort of problem to be referred to the Commission, and not under Article 29 (actually 29.6), whose only relevance is a cross-reference to Article 55.3.1 and which itself concerns a similar but distinct matter with no mention of the Commission. Bouchet, voting FOR, included the bibliographic correction that the gastropod name *Ancylus* is available from an unnumbered page in the introduction of O.F. Müller, 1773.

Original references

The following are the original references to the names placed on Official Lists and Index by the rulings given in the present Opinion:

Ancyla, Lepeletier de Saint Fargeau, 1841, *Histoire Naturelle des Insectes–Hyménoptères* [vol. 2], p. 294.

ANCYLAINI Michener, 1944, *Bulletin of the American Museum of Natural History*, **82**(6): (emended from ANCYLINI Michener, 1944).

ANCYLINI Michener, 1944, *Bulletin of the American Museum of Natural History*, **82**(6): 273.

oraniensis, *Ancyla*, Lepeletier de Saint Fargeau, 1841, *Histoire Naturelle des Insectes–Hyménoptères* [vol. 2], p. 294.

Official Correction: *Microcephalops* De Meyer, 1989 (Insecta, Diptera)

A letter was received from Néstor J. Cazzaniga (*Universidad Nacional del Sur, Departamento de Biología, Bioquímica y Farmacia San Juan, 670 8000, Bahía Blanca Argentina*) in June 2009 to amend the entry on the Official List of Generic Names in Zoology for *Microcephalops* De Meyer, 1989 to record the correct gender for this name as masculine.

Microcephalops De Meyer, 1989 (type species by original designation *Pipunculus banksi* Aczél, 1940) was placed on the Official List of Generic Names in Zoology by Opinion 2000 (BZN 59(2): 143–144, June 2002, entry (2)(b)), which listed it as having a feminine gender.

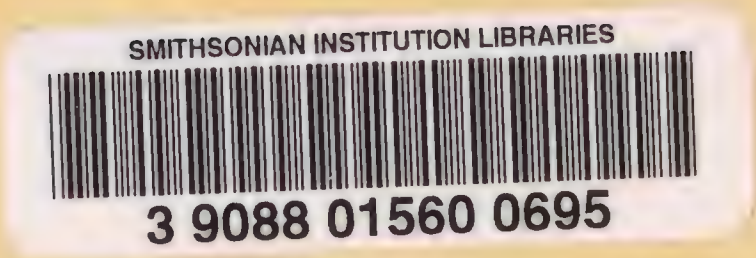
Article 30.1.4.3 of the Code states that ‘A compound genus-group name ending in -ops is to be treated as masculine, regardless of its derivation or of its treatment by its author’, and both the history of Case 3132 (BZN 58(1): 19–23), which resulted in Opinion 2000, and the usage of the name *Microcephalops* De Meyer, 1989, demonstrate that the correct gender for this name is masculine.

In accordance with Article 80.4 of the Code, which states that the Commission can publish an Official Correction of an error or omission in an Opinion without further vote when the correction does not negate the Opinion or its consequences, notice is hereby given that entry 2(b) of Opinion 2000 is corrected to read: ‘*Microcephalops* De Meyer, 1989 (gender: masculine), type species by original designation *Pipunculus banksi* Aczél, 1940’, and the entry on the Official List of Generic Names in Zoology is amended to:

Microcephalops De Meyer, 1989, *Bulletin de l’Institut Royal des Sciences Naturelles de Belgique (Entomologie)*, 59: 120 (gender: masculine) (type species, by original designation: *Pipunculus banksi* Aczél, 1940) (Insecta, Diptera). Op. 2000; original entry amended as per BZN 67: 118.

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ISSN 0007–5167

W H R E F

The Bulletin of Zoological Nomenclature

The Official Periodical of the
International Commission
on Zoological Nomenclature



ICZN

THE BULLETIN OF ZOOLOGICAL NOMENCLATURE

The *Bulletin* is published four times a year for the International Commission on Zoological Nomenclature by the International Trust for Zoological Nomenclature, a registered charity (no. 211944) based in the U.K. The annual subscription for 2011 is £200 or US\$340 or €280, postage included; individual subscribers for personal use are offered a subscription of £100 or US\$170 or €140. All manuscripts, letters and orders should be sent to:

The Executive Secretary

International Commission on Zoological Nomenclature

Natural History Museum

Cromwell Road

London, SW7 5BD, U.K.

(Tel. +44 207 942 5653; e-mail: iczn@nhm.ac.uk)

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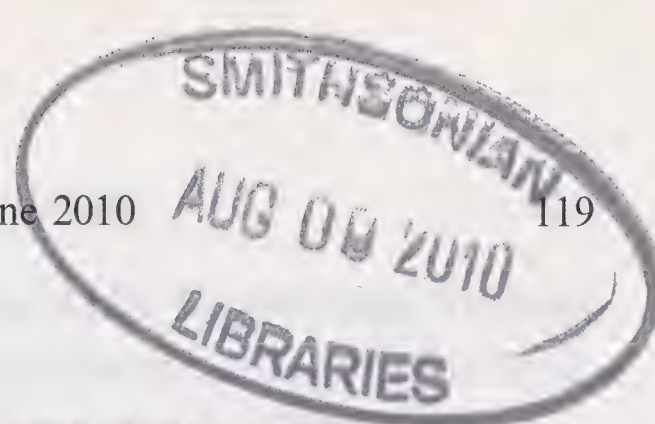
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Cover image: *Cyanea annasethe* (Haeckel, 1879), a scyphomedusa illustrated by Ernst Haeckel in *Kunstformen der Nature*, plate 8, fig. 1 as "*Desmonema Annasethe*" (an enhanced image of "*Desmonema Annasethe*" previously figured by the same author in *Das System der Medusen*, plate XXX, fig. 1).



BULLETIN OF ZOOLOGICAL NOMENCLATURE

Volume 67, part 2 (pp. 119–196)

30 June 2010

Notices

(1) Applications and correspondence relating to applications to the Commission should be sent to the Executive Secretary at the address given on the inside of the front cover and on the Commission website. English is the official language of the *Bulletin*. Please take careful note of instructions to authors (present in a one or two page form in each volume and available online at <http://www.iczn.org/guidelines.html>) as incorrectly formatted applications will be returned to authors for revision. The Commission's Secretariat will answer general nomenclatural (as opposed to purely taxonomic) enquiries and assist with the formulation of applications and, as far as it can, check the main nomenclatural references in applications. Correspondence should be sent by e-mail to 'iczn@nhm.ac.uk' where possible.

(2) The Commission votes on applications eight months after they have been published, although this period is normally extended to enable comments to be submitted. Comments for publication relating to applications (either in support or against, or offering alternative solutions) should be submitted as soon as possible. Comments may be edited (see instructions for submission of comments at http://www.iczn.org/Instructions_for_comments.html).

(3) Requests for help and advice on the Code can be made direct to the Commission and other interested parties via the Internet. Membership of the Commission's Discussion List is free of charge. You can subscribe and find out more about the list at <http://list.afriherp.org/mailman/listinfo/iczn-list>.

(4) The Commission also welcomes the submission of general-interest articles on nomenclatural themes or nomenclatural notes on particular issues. These may deal with taxonomy, but should be mainly nomenclatural in content. Articles and notes should be sent to the Executive Secretary.

New applications to the Commission

The following new applications have been received since the last issue of the *Bulletin* (volume 67, part 1, 31 March 2010) went to press. Under Article 82 of the Code, the existing usage of names in the applications is to be maintained until the Commission's rulings on the applications (the Opinions) have been published.

CASE 3520: *Boccardia proboscidea* Hartman, 1940 (Annelida, SPIONIDAE): proposed conservation of the specific name. V.I. Radashevsky & L.H. Harris.

CASE 3521: *Megaselia abdita* (Diptera, PHORIDAE): proposed conservation of the specific name. R.H.L. Disney, M. Akam, P. Simpson & U. Schmidt-Ott.

CASE 3522: *Chaetospania* Karsch, 1886 (Insecta, Dermaptera): proposed conservation by suppression of *Platylabia* Dohrn, 1867, and proposed emendation of the

current spelling of PALICINAE Burr, 1910 (Dermaptera, SPONGIPHORIDAE) to remove homonymy with PALICIDAE Bouvier, 1898 (Crustacea, Decapoda). P. Kočárek.

CASE 3523: *Lamprocoris lateralis* (Guérin-Méneville, 1838) (Insecta, Heteroptera): proposed precedence over *Lamprocoris obtusus* (Westwood, 1837). D. Rédei & J.-F. Tsai.

CASE 3524: *Thecla dumetorum* Boisduval, 1852 (currently *Callophrys dumetorum*, Lepidoptera, LYCAENIDAE): proposed neotype; and *Thecla sheridonii* W.H. Edwards, 1877 (currently *C. sheridanii*): proposed conservation. J.A. Scott, C.S. Guppy, J.P. Pelham, J.V. Calhoun, K.E. Davenport, M.S. Fisher & M.E. Toliver.

CASE 3525: *Chaetopterus variopedatus* [Renier, 1804] and *Myxicola infundibulum* (Renier in Meneghini, 1847): proposed conservation of the specific names and attribution of authorship of *Lumbrineris coccinea* (Renier in Meneghini, 1847) and *Sternaspis scutata* (Renier in Ranzani, 1817) (Annelida, Polychaeta). A.I. Muir & M.E. Petersen.

ICZN & ZooBank strategy meeting, 6–7 May 2010, Denver

We held an intensive meeting of ICZN and ZooBank officers to discuss strategy for progressing ICZN core projects. The focus was on development of ZooBank, as it is pivotal for most ICZN activities in the future. We determined that 1) ZooBank policies will be drafted by mid-summer 2010 and under vote by November 2010; 2) the proposed amendment on e-only publication will be sent to vote after the new ZooBank prototype is available for Commission testing (currently pegged at October 2010); 3) development of the next edition of the Code will logically follow on from these activities, thus intensive work on the new Code will commence after these events have been concluded. We also discussed the process and timelines for presenting Lists of Available Names (LANs) under Article 79, and considered future ICZN major issues such as implementation of an updated type concept to meet changing methods of documenting biodiversity.

Jan van Tol, President

Daphne Fautin, Vice-President

Frank Krell, ZooBank Committee Chair

Richard Pyle, ZooBank Developer (via remote link)

Ellinor Michel, Executive Secretary

Jonathan Todd, observer & notetaker

Case 3495***Chionobas chryxus* Doubleday, 1849 (currently *Oeneis chryxus*; Insecta, Lepidoptera, NYMPHALIDAE): proposed conservation of usage by designation of a neotype**

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(e-mail: JameScott@juno.com)

Abstract. The purpose of this application, under Article 75.5 of the Code, is to conserve the usage of the name *Chionobas chryxus* Doubleday, 1849 (currently *Oeneis chryxus*) in its original and accustomed usage for a nymphalid butterfly from the Rocky Mountains by designation of an identifiable neotype. *Chionobas chryxus* Doubleday 1849 (currently *Oeneis chryxus*) was described and figured from a male specimen which has since been lost. The original figure perfectly matches males of one of the two species into which the species was later divided. In 1984 a female specimen was designated as lectotype but the lectotype lacks adequate locality data and is a female so cannot be determined as either of the two segregate species, and the validity of this designation under Article 72.4.1.1 of the Code is unclear. It is proposed that all previous type fixations for the species *Chionobas chryxus* be set aside and a male specimen identifiable as the species proposed in the original publication be designated as neotype.

Keywords. Nomenclature; taxonomy; Insecta; Lepidoptera; NYMPHALIDAE; *Oeneis*; *Oeneis chryxus*; *Oeneis calais altacordillera*; nymphalid butterfly; Rocky Mountains.

1. *Chionobas chryxus* (currently *Oeneis chryxus*) was established (Doubleday, 1849, pl. 64, fig. 1) in the caption ‘1. CHIONOBAS CHRYXUS Doubleday’ printed at the bottom of a plate showing a colour engraving of the upper side of a male. Authorship of the name *chryxus* has often been listed as Doubleday & Hewitson because W. Hewitson produced the illustration, and Butler (1868) listed only Hewitson as the author, but Article 50 makes it clear that the person who publishes the name is the author; publication of the name in association with an illustration confers availability on the name (Article 12.2.7) but does not affect authorship. Doubleday wrote the entire Vol. 1, in which this plate appeared, so was the author (Hemming, 1941). The engraving, which was reproduced in colour by Kondla et al. (2006, pl. IV), obviously represents a male, because the large brown patch on the dorsal forewing is the male stigma and the forewing is narrow and pointed. This engraving is not a chimera combining several different specimens but accurately depicts a male specimen of the twig-ovipositing species discussed in para. 9 below and there were no other specimens of *Chionobas* like it in the museum at that time (see para. 4, below). Forewings of females are very different from those of males (more rounded, mostly orange, lacking the wide brown streak and stigma and with an extra eyespot); any engraving that combined male and female features would be instantly recognisable as such.

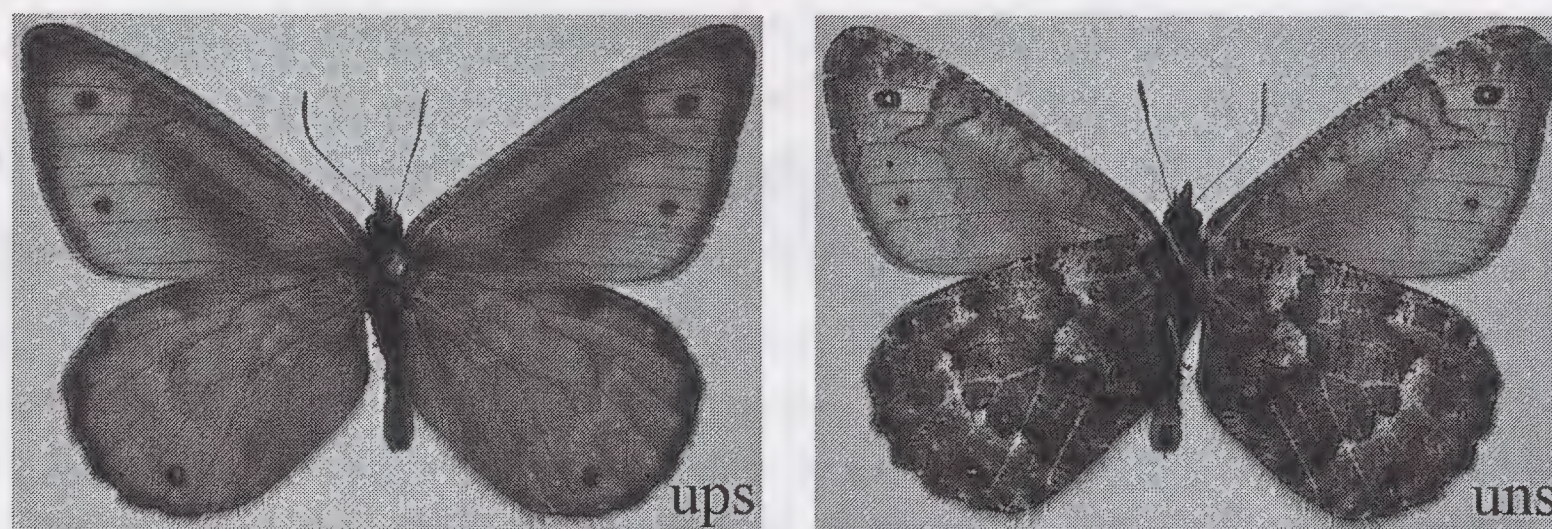


Fig. 1. Proposed neotype of *Chionobas chryxus* (a male from Rock Lake (~32 air km WNW Hinton), Alberta, July 15, 1989, collected by Norbert G. Kondla and deposited in the Canadian National Collection (CNC) in Ottawa). Label: "1989-7-15 AB, Rock Lake, NG Kondla, topotype". Total wingspan of spread specimen is 52 mm. Forewing chord/radius 'length' is 29 mm.

2. Westwood (1851) authored volume 2 of the same work, wherein he presented only this simple text concerning *C. chryxus* in a two-page catalogue of all the species of *Chionobas* known in the world at that time (p. 383): '13. CHION. CHRYSUS./ *Chionobas Chryxus* E. Doubl. MS.; Doubl. Westw. & Hewits. Gen. D. Lep. pl. 64, f. 1./Rocky Mountains, North America. B. M.' Westwood (1851) thus restricted the type locality of *chryxus* to the Rocky Mountains, North America. He listed the engraving that constituted the original publication and listed no other specimens.

3. The male *Chionobas chryxus* in the original engraving, which could not be found in the Natural History Museum, London, was apparently one of three specimens from the 'Rocky Mountains' collected in 1844 and presented in 1845 (Shepard, 1984), listed by Doubleday (1848, Appendix, p. 31) with this entry: '*Chionabas* —?/a–c. Rocky Mountains, North America. Presented by the Earl of Derby.' [In this Appendix, *Chionobas* is misspelled.] The '—?' in this listing needs to be explained. In the introduction to the main part of this same book, Gray (1845) states, '... the different individuals of each species contained in the collection are indicated by the letters a, b, & c, following the name of the species, and its synonymes [sic].' Most of the entries in the main part of the book and about half of those in the Appendix, represent specimens identified to genus and species, but about half the entries in the Appendix contain a generic name followed by '—?', which clearly indicates that the specimens involved were unidentified at least as to species and perhaps simply undescribed. Multiple entries of single generic names followed by '—?' appear, e.g., the two entries for *Limnas* received from Venezuela from Mr. Dyson evidently belonging to two different species. The manner of listing *Chionobas* suggests that Doubleday considered all three specimens ('a–c') to belong to one species. Inspection of the collections in the Natural History Museum, London (NHM) by R.M. Pyle (in Shepard, 1984, p. 42) and A.G. Gabriel (in Ehrlich, 1955, p. 181) showed that Doubleday (1848) missed listing some individuals of at least five species of butterflies that had been donated to the British Museum (now Natural History Museum, London (NHM)) in 1845 by the Earl of Derby. An entry in the Accessions Books of the NHM lists 50 Lepidoptera from the Rocky Mountains donated then by him yet only 21 are listed by Doubleday (1848); and butterflies from the Rocky Mountains donated in 1847 by him are missing from the Accessions Books; and some specimens of four species reported to have been donated by him according to Doubleday (1848)

are now missing. The lack of complete correspondence between the specimens known to be in the museum and the inventory of Doubleday (1848), introduces some uncertainty into the inferences drawn in this section of this application, but the three specimens of *Chionobas* donated in 1845 can all be accounted for by the male engraving and two existing females collected in 1844 and presented in 1845 (see next paragraph).

4. None of the three other entries for species of *Chionobas* in Doubleday's (1848) Appendix, nor four other entries for other congeneric species in the main text of Doubleday (1848, p. 123), pertains to any species of *Chionobas* that looks similar in either the male or female to *Chionobas chryxus*. It is therefore assumed that the male *C. chryxus* in the original figure was one of the three specimens mentioned in para. 3 above from the Rocky Mountains, presented by the Earl of Derby. Under Article 72.4.1.1, the listing by Doubleday (1848) of three specimens may be taken into account in considering whether his original type series of *C. chryxus* included other specimens besides the originally illustrated male of 1849.

5. The male specimen that we infer provided the basis for the original publication of *Chionobas chryxus* by Doubleday (1849) has not definitely been seen since 1849. It was not listed in the collections of the British Museum by Riley & Gabriel (1924), and Shepard (1984) wrote that it had been lost. In 2009, Blanca Huertas (curator of Lepidoptera) searched for some of Doubleday's relevant type specimens; after examining the registries and collection she confirmed that no other specimens of *C. chryxus* apart from the two supposed syntype females photographed by Shepard (1984) (see paras. 7–8 below concerning their nomenclatural status) are in the NHM Lepidoptera collection. Doubleday might have placed the missing original *chryxus* male in his own collection, which was later sold and dispersed so the specimen may now be destroyed or unrecognisable (John Calhoun, pers. comm.). It might also have been discarded by curators in the British Museum prior to 1924 when Riley & Gabriel catalogued and published an inventory of the butterfly types (the Introduction to Riley & Gabriel (1924) stated that some types had been discarded, probably because they were imperfect). As Doubleday died in 1849, if the original male was retained by Westwood after being illustrated by Hewitson, it might have gone to the Hope Collections in Oxford with Westwood's collection. However no specimens were found in these collections although a space was laid out for the species. 'There are no pin-holes in this part of the drawer which suggests we have never held this species at Oxford.' (J. Hogan, pers. comm.). Calhoun notes that it may have been transferred to the collection of the Entomological Club prior to Doubleday's death, but this collection was sold and dispersed. It is not in World Museum Liverpool (The National Museums Liverpool), which never received any invertebrates in 1851 when the museum opened, and now has no invertebrates from the Earl of Derby (Guy Knight and Clemency Fisher, pers. comm.). Most likely, the male was lost when it was removed from the British Museum collection to be illustrated by Hewitson, and was never returned to the collection (John Calhoun, pers. comm.). Other specimens illustrated by Doubleday (1849) on the same plate as *C. chryxus* were not lost (the specimen illustrated on plate 64, fig. 2 was designated lectotype of *Erebia mancinus* Doubleday by Shepard (1984)).

6. Narrower specification of the type locality of *C. chryxus* than 'Rocky Mountains' is difficult. Shepard (1984, pp. 37–41) restricted the type locality of six species

named by Doubleday including *C. chryxus*, and represented in the Natural History Museum by specimens with labels stating 'Rocky Mountains', to Rock Lake, Alberta, Canada, because historical records suggest that they were collected by the Earl of Derby's collector Joseph Burke in 1844 at or near Stony Lake near Jasper House, now renamed Rock Lake. Three of those species do not occur south of Alberta. Shepard noted, though, the possibility that *C. chryxus* and several other species were collected by Burke in 1845 in the area from Fort Hall in SE Idaho to the Platte River in Wyoming. The two females of *C. chryxus* now in the museum were collected in 1844 and presented in 1845 so were probably from Rock Lake, but the missing male might have been collected in 1845 in Idaho/Wyoming and presented to the museum in 1847. Ehrlich (1955, p. 181) wrote that four other butterfly species presented by the Earl of Derby must have been collected from central Wyoming in U.S.A. to Jasper National Park in the Canadian Rockies, with 'a little better evidence for the eastern side of the divide in the Canadian Rockies north to Jasper.' There is no way of knowing whether these and other Earl of Derby specimens (more than 50 in all) originated from the same locality. Another possible, but unlikely, source of the three specimens of *Chionobas* listed by Doubleday (1848) was the English botanist Thomas Nuttall (John Calhoun, pers. comm.), who crossed the Rocky Mountains in Wyoming and Idaho in 1834 and returned to England in 1841 to settle near the home of the 13th Earl of Derby. However, if Nuttall then passed the specimens to him, the Earl might have presented them to the British Museum (Natural History) as early as 1843, whereas the two females of *C. chryxus* now in the museum have labels indicating they were received in 1845 (para. 8 below).

7. In their list of types of Lepidoptera in the British Museum, Riley & Gabriel (1924) identified one of the above-mentioned female specimens of *C. chryxus* from the 'Rocky Mountains' as a type, and they also labeled it as 'TYPE No. Rh3845' (they missed the second female found by Shepard 1984). In their publication, it was listed as '3845. **chryxus**, *Chionobas* Doubl., Westw., & Hew., Gen. D.L., 2./p. 383, pl. 64, f. 1. 1851♀'. This did not constitute a lectotype designation because the conditions of Article 74.3 were not met (it was just in a list of all the museum's types, which was not intended to designate lectotypes for any taxon). The labels on the specimen do not constitute a type designation either (Article 72.4.7).

8. Shepard (1984, p. 42) explicitly designated the same female specimen as the lectotype (lectotype 3845; illustrated in that work and also by Kondla et al., 2006) because 'Doubleday did not label type specimens and thus lectotypes need to be selected.' Kondla et al. (2006) regarded this lectotype designation as invalid, because they thought that the male in the original engraving was the holotype by monotypy. The specimen chosen by Shepard has six labels, arranged from old to new: (1) an old brown circular label with the barely legible, hand-printed scrawl 'Rocky Mts.' on the upper side and '45-136' on the underside; this label was the only original label, and was the same as the only label present on the other female; this label was present in 1984 but is now missing. The numbers '45-136' are the date and number from the Accessions Books record and indicate that it was accessioned by the museum in 1845. The other five labels were placed on the specimen after the publication of the name *chryxus*: (2) a less-old slightly-brownish, long rectangular label with hand-printed 'Rocky Mts. 45-136' on the upper side and 'chryxus. Doubl. Hew. This spec. agrees best. w. figure of type.' on the underside, and a hand-printed ♀ on the upperside of

a small, rectangular tag glued to one end of the label over the 'ryx' letters in 'chryxus' (this label was most likely affixed by Butler (1868)); (3) a newer nearly-square label with 'B.M. TYPE No. Rh3845 Chionobas chryxus D.W.& H. ♀' ('B.M. TYPE No. Rh' printed, the rest hand-printed); this label was evidently affixed by Riley & Gabriel in the early 1920s and they may have affixed the tag to label 2 (John Calhoun, pers. comm.), although the latter is quite brown; (4) a newer slightly-brownish circular label with a tawny-orange rim, with the word '?Type' ('?' hand-printed, 'Type' printed) (this label is evidently relatively recent and was present in 1984); (5) a large, red-paper label with hand-printed 'Lectotype of Chionobas chryxus Doubleday, designated by Jon H. Shepard, 1983'; (6) a new circular label with a blue rim with LECTO-TYPE printed; this label is new since 1984.

9. The two *Oeneis* (*Chionobas*) species involved now have disputed names. The nominal species *Oeneis chryxus* (Doubleday, 1849) was thought to range from the Rocky Mountains of western North America across most of Canada, until it was found to include two separate species that are sympatric at middle altitudes in the Rocky Mountains (Scott, 2006). One species referred to as *O. chryxus* by Kondla et al. (2006) occurs at lower altitudes throughout the Rocky Mountains. It oviposits on twigs at the base of conifer trees, and the larvae fall on and eat *Carex* turf growing beneath the tree, where the shade slows larval growth and produces a biennial life cycle; adults mate on hilltops. The engraving in Doubleday (1849) is an excellent representation of the male of this twig-ovipositing species, and for this reason Kondla et al. (2006) used the name *O. chryxus* for this species. The other Rocky Mountains species, *O. calais altacordillera* Scott, 2006, mostly occurs at higher altitudes and oviposits on grasses/sedges away from trees so can occur at colder high altitude even on tundra (it is also biennial); adults mate in swales. If Shepard's (1984) lectotype designation is valid after all, on the presumption that the two females in the Natural History Museum were known to Doubleday and recognized by him as belonging to *O. chryxus* at the time the original engraving was published (Article 72.4.1.1 and its Example), then the name *altacordillera* may be a synonym of *chryxus*. Although females of the two taxa are more-or-less indistinguishable (Scott, 2006), Kondla et al. (2006) wrote that Shepard's female lectotype is more likely to be conspecific with *altacordillera* than with *chryxus*. They stated, though (p. 23) that 'females are not very good for identification, so that purported lectotype isn't much help in determining the identity of *chryxus*.' If the lectotype of *O. chryxus* is considered to be conspecific with *O. calais altacordillera*, then the twig-ovipositing species will be left without a name, resulting in nomenclatural instability.

10. Two contrary interpretations of the type series of *Chionobas chryxus* in the literature may be differentiated. Either there is a holotype by monotypy (the now lost male specimen, the existence of which is only inferred from the precise match of the image in the original engraving to one of the two *Chionobas* species), or there is a type series consisting of the three specimens listed as *Chionobas* —? in the Appendix of Doubleday (1848), in which case Shepard's (1984) lectotype designation is valid. Article 72.4.1 states 'The type series of a nominal species-group taxon consists of all the specimens included by the author in the new nominal taxon (whether directly or by bibliographic reference), except any that the author . . . doubtfully attributes to the taxon.' The original publication (Doubleday, 1849) *directly* included in *C. chryxus* only the specimen(s) (presumably a single male) depicted in the engraving. As

has been noted, Shepard (1984) found only two females from the Rocky Mountains in the Natural History Museum, and because Doubleday (1848) listed three, the illustration is inferred to have been based on the third one. Article 72.4.1.1 states, 'For a nominal species or subspecies established before 2000, any evidence, published or unpublished, may be taken into account to determine what specimens constitute the type series.' An Example is provided wherein specimens known to Linnaeus and recognised by him as belonging to a particular species are included in the type series of that species despite their not being cited in Linnaeus (1758). In the present instance, because Article 72.4.1.1 is numbered and indented as subservient to 72.4.1, it seems that the search for unpublished evidence allowed by Article 72.4.1.1 must be limited to the specimen or specimens that might have been the model(s) for the original engraving, possess appropriate collection data, and were available to Doubleday. If more than one such specimen were found, all could be considered to be syntypes. The only specimens found with a 'Rocky Mountains' label at the Natural History Museum are two individuals that differ considerably from the original engraving (because they are females, and perhaps a different species). These were probably two of the specimens identified only as 'Chionabas —?' in Doubleday (1848 p. 31) and are only inferred, but not known for sure, to have been considered conspecific by him with the later illustrated male. Taking the contrary interpretation, one might argue that the lectotype is valid because the female had an original label stating 'Rocky Mts.' and an accession number '45–136' that led back to the specimens donated by the Earl of Derby, which matched Westwood's (1851) listing of *Chionobas chryxus* as from Rocky Mts. and the Earl of Derby, and because that female had been labeled as a *chryxus* type by Riley & Gabriel (1924). Proponents of this opinion must believe that Doubleday (1848) intended that the 'Chionabas —?' entry in his inventory convey information on one and only one species. Inclusion of specimens not mentioned in the original publication is clearly permitted by the cited Example to Article 72.4.1.1, but use of information that merely *suggests* Doubleday considered them all to be conspecific seems to exceed this Article's intention. I do not think these females can be regarded as part of the type series, unless Article 72.4.1.1 is interpreted as independent of 72.4.1. However, Shepard's (1984) designation of the female lectotype was valid under the 2nd edition of the Code in force in 1984.

11. In practice, Shepard's (1984) lectotype of *Chionobas chryxus* cannot be confidently identified as belonging to either of the two species mentioned above (para. 9). Kondla et al. (2006, p. 23) wrote, 'As a practical matter, that (i.e. Doubleday's (1849)) engraving has to be used to define the name *chryxus* because it is a male'. They also wrote that the female lectotype was 'evidently [meaning 'probably'] *altacordillera*', based on its wing pattern, thus was not conspecific with the real type (the specimen in the engraving). But females cannot be used to define either species: unpublished observations by Scott of the females available to Kondla's team and those collected since, which are correctly identified based on their occurrence at sites that have only one of the two species, have shown that individuals like the lectotype occur in both species, so the lectotype cannot be confidently identified. The original lost male and the few specimens of *Chionobas* later collected at Rock Lake in Alberta (the most probable locality of the original male) are of the twig-ovipositing species called *chryxus* by Kondla et al. (2006), and it seems likely that only this species occurs at the original locality. If this is correct, the female

lectotype should be the same species as the lost male, contrary to the suggestion of Kondla et al. (2006).

12. A neotype is needed because: 1) the original male is lost (for details of the search for it, see para. 5); 2) the lectotype designated by Shepard (1984) has no adequate locality data and cannot be identified to species, and thus the correct application of the names of both species is in dispute; and 3) whether the species has a (lost) male holotype or a validly designated female lectotype is debatable as noted in para. 10.

13. A neotype is hereby proposed, a male from Rock Lake (~32 air km WNW Hinton), Alberta, July 15, 1989, collected by Norbert G. Kondla, figured in Fig. 1 and also as 'chryxus Alta. Topotype' by Kondla et al. (2006, Plate IV), which has a large male stigma on the dorsal forewing, with most of the wing orange beyond the stigma, and was found to be the twig-ovipositing species by Kondla et al. (2006). This neotype designation resolves the identity of the twig-ovipositing species as conspecific with the original male, and also preserves the current name *altacordillera* for the meadow-grass-ovipositing species. This neotype belongs to the Rocky Mountains species that has always been named and illustrated as *chryxus* in past literature (only one book illustrated the other species *altacordillera*, as 'Chryxus Arctic (Colorado-high)', Glassberg, 2001, p. 213). The neotype has two labels reading 'NEOTYPE *Chionobas chryxus*, designated by J. Scott & N. Kondla, 2010' and '1989-7-15 AB/Rock Lake/NG Kondla/topotype'. This neotype closely resembles the male *chryxus* depicted in the original engraving, as noted and reproduced by Kondla et al. (2006, pl. IV). (The photo of the copy of the original engraving in the Canadian National Collection shown in pl. IV is a little paler overall than most males of *Oeneis* (*Chionobas*) *chryxus* in Alberta today, but the colour is deeper orange in another copy of the engraving). The neotype comes from the locality thought to be the original locality by Shepard (1984), although as noted in para. 6 the original male might have come from the Rocky Mountains of Wyoming. It is deposited in the Canadian National Collection (CNC) in Ottawa.

14. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to set aside all previous type fixations for *chryxus* Doubleday 1849, as published in the binomen *Chionobas chryxus*, and to designate as the neotype the male specimen from Rock Lake Alberta with two labels reading 'NEOTYPE *Chionobas chryxus*, designated by J. Scott & N. Kondla, 2010' and '1989-7-15 AB/Rock Lake/NG Kondla/topotype'; Canadian National Collection (CNC) in Ottawa;
- (2) to place on the Official List of Specific Names in Zoology the name *chryxus* Doubleday 1849, as published in the binomen *Chionobas chryxus* and as defined by the neotype designated in (1) above.

Acknowledgements

John V. Calhoun sent copies of old publications and gave valuable historical insights. Gerardo Lamas provided information regarding old publications. Norbert G. Kondla, Nick V. Grishin, Jonathan P. Pelham, Crispin S. Guppy and Jon H. Shepard gave opinions on this case. Blanca Huertas (*Curator of Lepidoptera, Natural History Museum London*) provided photos, searched for possible *Chionobas chryxus* syntypes

in that museum, and searched Accessions Books. Guy Knight (*Curator, National Museums Liverpool, England*) and Clemency Fisher (*Curator of vertebrate zoology, National Museums Liverpool, England*) looked for syntypes in that museum. James Hogan, Oxford, England, looked for syntypes in the Hope Collections at Oxford.

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Acknowledgement of receipt of this application was published in BZN **66**: 108.

Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to the Executive Secretary, I.C.Z.N., c/o Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).

Case 3508***Maculinea* Van Eecke, 1915 (Lepidoptera: LYCAENIDAE): proposed precedence over *Phengaris* Doherty, 1891**

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Abstract. The purpose of this application, under Article 23.9.3 of the Code, is to conserve the widely used generic name *Maculinea* Van Eecke, 1915 in its accustomed usage. The name *Maculinea* Van Eecke, 1915 is threatened by its senior synonym *Phengaris* Doherty, 1891. It is proposed that *Maculinea* be given precedence over the other name whenever the two are considered to be synonyms.

Keywords. Nomenclature; taxonomy; Lepidoptera; LYCAENIDAE; *Maculinea*; *Phengaris*; Eurasia.

1. The genus-group name *Maculinea* Van Eecke, 1915 (p. 28), type species *Papilio alcon* Denis & Schiffermüller, 1775 (p. 182) by subsequent designation by Graves (1928, p. 102) (see Opinion 503, Opinions and Declarations, 3 March 1958, **18**: 121–140) has been universally used for the European and Asian ‘Large Blue’

butterflies for almost a century. This involves the old and the recent scientific literature alike, as well as all standard reference books on European butterflies (Higgins & Riley, 1970; Tolman & Lewington, 1997; Asher et al., 2001, etc.). The names *Maculinea* Van Eecke, 1915 and *Papilioalcon* Denis & Schiffermüller, 1775 are entered on the Official List of Names in Zoology.

2. The obligate myrmecophilous life-style of *Maculinea* has attracted a vast number of studies, many of which appeared in leading scientific journals. *Maculinea* is a model organism for studies on the origin and evolution of parasitic interactions and of host-parasite communication channels (Fiedler, 1998; Als et al., 2004; Thomas & Settele, 2004; Hovestadt et al., 2007; Barbero et al., 2009; Nash et al., 2009). *Maculinea* are also keystone species and have attracted a great deal of attention from a conservationist's point of view (Munguira et al., 1999; Van Swaay & Warren, 2003; Thomas et al., 2009; Settele & Kühn, 2009). All species are afforded legal protection, exclusively under the generic name of *Maculinea*, from collectors, trade and habitat destruction in EU and many national and regional laws.

3. Since the publication of Fiedler's (1998) work comparing the life histories of myrmecophilous lycaenids biologists have become increasingly aware that butterflies of the genus *Maculinea* may be closely related to those of the East Asian genus *Phengaris* Doherty, 1891. The type species of *Phengaris* is *Lycaena atroguttata* Oberthür, 1876, by monotypy.

4. Some recent publications (Als et al., 2004; Pech et al., 2004; Fric et al., 2007) have confirmed based on both molecular and morphological data that species of *Maculinea* and *Phengaris* form a monophyletic group. Fric et al. (2007) have proposed a series of new combinations where all recognised *Maculinea* taxa are listed under *Phengaris*, and consider the two genus-group names to be synonyms.

5. *Maculinea* has long been considered to include six species, all Palaearctic. Of these, five species occur in Europe and one (*M. arionides*) is East Palaearctic. One additional species was described by Sibatani et al. (1997) from Korea and another four or more nominal taxa, mainly from China and Japan, may be specifically distinct (Fric et al., 2007). *Phengaris* has attracted much less research. It includes three species, mainly from China and Japan.

6. A Google search provided a total of 20,400 'hits' of various origins dealing with either *Maculinea* or *Phengaris*. More specifically, the name *Maculinea* was used well over 30 times more often than the name *Phengaris* to designate the 6 'classical' species, as detailed in the following table.

7. Strict application of the Code would result in considerable nomenclatural confusion. Although the 'new' combinations proposed by Fric et al. (2007) are slowly entering the scientific literature, they are in fact mainly restricted to taxonomic papers. Given the importance of *Maculinea* as a model system and the use of this name in recent European conservation legislation, its synonymisation with *Phengaris* will probably continue to be ignored by most ecologists and conservation biologists, while being followed by taxonomists. This will lead to nomenclatural confusion. We propose that, to ensure nomenclatural stability, the Commission rules to give priority to *Maculinea* Van Eecke, 1915 over *Phengaris* Doherty, 1891 in its accustomed usage whenever the two generic names are considered to be synonyms.

8. The International Commission on Zoological Nomenclature is accordingly asked:

<i>Maculinea</i>		<i>Phengaris</i>	
<i>Maculinea arion</i>	18,900	<i>Phengaris arion</i>	1,000
<i>Maculinea arionides</i>	3,340	<i>Phengaris arionides</i>	657
<i>Maculineaalcon</i>	75,200	<i>Phengarisalcon</i>	1,020
<i>Maculinea rebeli</i>	49,900	<i>Phengaris rebeli</i>	1,590
<i>Maculinea teleius</i>	45,900	<i>Phengaris teleius</i>	878
<i>Maculinea nausithous</i>	17,700	<i>Phengaris nausithous</i>	1,230
TOTAL	210,940		6,375
—		<i>Phengaris albida</i>	619
—		<i>Phengaris atroguttata</i>	1,310
—		<i>Phengaris daitozana</i>	654
TOTAL			2,583

- (1) to use its plenary power to give the name *Maculinea* Van Eecke, 1915 precedence over the name *Phengaris* Doherty, 1891, whenever the two are considered to be synonyms;
- (2) to emend the entry for the generic name *Maculinea* Van Eecke, 1915, type species *Papilioalcon* Denis & Schiffermüller, 1775 by subsequent designation by Graves (1928), in the Official List of Generic Names in Zoology to endorse that the name *Maculinea* Van Eecke, 1915 is to be given precedence over the name *Phengaris* Doherty, 1891, whenever the two are considered to be synonyms;
- (3) to place on the Official List of Generic Names in Zoology the name *Phengaris* Doherty, 1891 (genus: feminine), type species *Lycaena atroguttata* Oberthür, 1876 by monotypy, with the endorsement that it is not to be given priority over the name *Maculinea* Van Eecke, 1915, whenever the two are considered to be synonyms;
- (4) to place on the Official List of Specific Names in Zoology the name *atroguttata* Oberthür, 1876, as published in the binomen *Lycaena atroguttata* (specific name of the type species of *Phengaris* Doherty, 1891).

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Acknowledgement of receipt of this application was published in BZN 67: 1.

Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to the Executive Secretary, I.C.Z.N., c/o Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).

Case 3509

***Cetonia squamosa* Gory & Percheron, 1833 (currently *Aethiessa squamosa*; Insecta, Coleoptera): proposed conservation of the specific name**

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Abstract. The purpose of this application, under Article 23.9.5 of the Code, is to conserve the specific name *Cetonia squamosa* Gory & Percheron, 1833 (currently *Aethiessa squamosa*, CETONIIDAE, endemic in Sicily), threatened by the senior homonym *Cetonia squamosa* Lefebvre, 1827 (currently *Protaetia (Netocia) squamosa*, also CETONIIDAE, endemic in southern Italy including Sicily). Both names are in current use, but are placed in different genera and are unlikely ever to be treated as congeneric. In order to conserve the current usage of the name it is proposed that *C. squamosa* Gory & Percheron, 1833 (which does not have junior synonyms) be conserved by ruling that it is not invalid by reason of being a junior homonym of *C. squamosa* Lefebvre, 1827.

Keywords. Nomenclature; taxonomy; CETONIIDAE; *Protaetia squamosa*; *Aethiessa squamosa*; flower chafers; Southern Italy; Sicily; North Africa.

1. Lefebvre (1827, p. 103) described *Cetonia squamosa*, a flower chafer (Coleoptera, SCARABAEOIDEA, CETONIIDAE) from Sicily. Reitter (1891, p. 65) transferred *Cetonia squamosa* to the genus *Potosia* Mulsant & Rey, 1870 but since then nobody has included that species in *Cetonia*, although its generic assignment has changed several times. It has been placed in the genus *Potosia* (Ragusa, 1893; Reitter, 1898; Mikšić, 1961), in the genus *Netocia* A. Costa, 1852 (Luigioni, 1929; Baraud, 1977; 1992; Carpaneto & Piattella, 1995; Sparacio, 1995; 2009; Dutto, 2005; Lapiana & Sparacio, 2006), or in *Protaetia* Burmeister, 1842 (Mikšić, 1987; Smetana, 2006), sometimes in the subgenus *Potosia* or *Netocia*. The latest catalogue (Smetana, 2006) lists it as *Protaetia (Netocia) squamosa*. The species is a southern Italian endemic, occurring from Abruzzo southwards to Sicily; it has only two synonyms: *tincta* Germar, 1838 (type location Sicily) and *crassicollis* (Burmeister, 1842), (type location Calabria). The latter has recently been considered to be a subspecies of *P. squamosa* (Lefebvre, 1827) by Sparacio (2009).

2. Gory & Percheron (1833) described *Cetonia squamosa* (pp. 60, 232), a flower chafer (Coleoptera, SCARABAEOIDEA, CETONIIDAE) from Sicily (the type locality indicated in the 'Tableau diagnostique' on page 60 is 'Sicile', but on page 232 it is mistakenly reported as 'Teneriffe', Canary Islands). However, the label of the holotype in the Muséum d'Histoire Naturelle in Geneva contains the following information: 'var. *squamosa* Lefeb. G. et P. – floralis Muls – Sicilia – Gory type – col. Melly'. Burmeister (1842, p. 405), when erecting the genus *Aethiessa*, moved *C. squamosa* Gory & Percheron, 1833 to that genus. Since then *A. squamosa* has been

considered either as a species (Gory & Percheron, 1833, pp. 60–232; Burmeister, 1842, p. 405; Sparacio, 2009, p. 158), or a variety, subspecies or junior synonym of *Aethiessa floralis* (Fabricius, 1787, p. 31), a widespread species occurring from Spain eastwards to Egypt and type species of *Aethiessa* Burmeister, 1842. A lectotype for *A. floralis* from Morocco was designated by Dutto & Keith (2008). In the following literature the use of the name *squamosa* as a variety or an aberration should be mostly interpreted as denoting either a subspecific taxon or, in connection with other similar forms (e.g. *elongata*), to a group of closely related species: *Aethiessa floralis* var. *squamosa* – Ragusa, 1893, p. 269; Reitter, 1898, p. 34; Mikšić, 1987, p. 114; *Aethiessa floralis* ab. *squamosa* – Winkler, 1924, p. 1121; Luigioni, 1929, p. 416; Brasavola De Massa, 1939, p. 158; Baguena Corella, 1967 p. 476; Baraud, 1977 p. 326; Baraud, 1985, pp. 595; Baraud, 1992, p. 781; *Aethiessa floralis* – Mikšić, 1961 p. 15; Carpaneto & Piattella, 1995, p. 16; Sparacio, 1995, p. 221; Lapiana & Sparacio, 2006, p. 227; Smetana, 2006, p. 283; *Aethiessa floralis* forma *squamosa* – Dutto, 2005, pp. 88–89.

3. The primary homonymy between *C. squamosa* Lefevre and *C. squamosa* Gory & Percheron has never been recognised, probably because the two nominal species have never been considered to be congeneric since their description. Ragusa (1893, p. 269) and also Reitter (1898, pp. 34, 74) recorded both *Aethiessa floralis* var. *squamosa* Gory & Percheron, 1833 and *Potosia squamosa* Lefebvre, 1827. All other authors have classed the two taxa according to their taxonomic opinion, but always in two different genera (*Aethiessa* and *Netocia* – Luigioni, 1929, pp. 416, 419; Baraud, 1977, pp. 326, 339; du Chatenet, 1986, pp. 433, 437; Baraud, 1992, pp. 781, 806; Sparacio, 1995, pp. 221, 222; Carpaneto & Piattella, 1995, pp. 16, 17; Micó e Galante, 2002, pp. 64, 72; Dutto, 2005, pp. 88–89, 148; Lapiana & Sparacio, 2006, pp. 277, 280; Sparacio, 2009, pp. 158, 162; *Aethiessa* and *Potosia* – Winkler, 1924, pp. 1121, 1127; Panin, 1957, pp. 275–281, 276–286; Kocher, 1958, pp. 74, 75; Mikšić, 1961, pp. 15, 16; Baguena Corella, 1967, pp. 472, 476; Sapuppo, 2002, pp. 253, 256; *Aethiessa* and *Protaetia* – Mikšić, 1987, pp. 114, 316; Baraud, 1985, pp. 595, 603; Smetana, 2006, pp. 283, 293).

4. The two taxa are currently placed in genera that are well separated morphologically and phylogenetically and it is unlikely that they will be treated as congeneric in the future. The junior homonym *C. squamosa* Gory & Percheron, 1833 has no available synonyms and therefore cannot be replaced with a pre-existing name. Nomenclatural stability in this case would be best achieved by conserving both names in their present usages, rather than by requiring the proposal of a new replacement name for the junior homonym.

5. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to rule that the name *squamosa* Gory & Percheron, 1833, as published in the binomen *Cetonia squamosa*, is not invalid by reason of being a junior primary homonym of *squamosa* Lefebvre, 1827, as published in the binomen *Cetonia squamosa*;
- (2) to place on the Official List of Specific Names in Zoology the following names:
 - (a) *squamosa* Lefebvre, 1827, as published in the binomen *Cetonia squamosa*;
 - (b) *squamosa* Gory & Percheron, 1833, as published in the binomen *Cetonia squamosa*, with the endorsement that it is not invalid by reason of being a junior primary homonym of *squamosa* Lefebvre, 1827, as published in the binomen *Cetonia squamosa*, as ruled in (1) above.

Acknowledgements

I would like to thank Alessandro Minelli, Bruno Massa, Alberto Ballerio, Marcello Arnone, Antonio Rey and Attilio Carapezza for their help and support.

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Acknowledgement of receipt of this application was published in BZN **67**: 1.

Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to the Executive Secretary, I.C.Z.N., c/o Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).

Case 3511

***Prionocerus bicolor* Redtenbacher, 1868 (Insecta, Coleoptera, CLEROIDEA, PRIONOCERIDAE): proposed precedence over *P. pertii* Laporte de Castelnau, 1836**

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Abstract. The purpose of this application, under Articles 23.9.3 and 81.2.3 of the Code, is to conserve the name *Prionocerus bicolor* Redtenbacher, 1868 for a common species of soft-winged flower beetle (CLEROIDEA, PRIONOCERIDAE) by giving it precedence over the unused older name *P. pertii* Laporte de Castelnau, 1836 whenever these names are considered to be synonyms.

Keywords. Nomenclature; taxonomy; Coleoptera; CLEROIDEA; PRIONOCERIDAE; *Prionocerus*; *P. bicolor*; Oriental region.

1. Laporte de Castelnau (1836, p. 37) described a new species of PRIONOCERIDAE (then under TELEPHORIDAE) from Java (Indonesia) as *Prionocerus pertii*. Although other parts of this publication have been cited subsequently, the description of *P. pertii* was completely forgotten by later workers on this family, and the name was never cited again in taxonomic papers, not even in the most comprehensive catalogues (Gemminger & Harold, 1869; Pic, 1926). The only reference listing *pertii* is the Index Animalium (Sherborn 1929, p. 4875) which, however, is a simple index of names and cannot be regarded as a taxonomic work, as it does not provide information on the validity of the included names.

2. Although the type material of *P. pertii* has not been traced and the original description does not conform to modern standards, it is sufficiently diagnostic to be assigned to *Prionocerus bicolor* Redtenbacher, 1868 (p. 109), also described from Java. The type series of *P. bicolor* consists of the holotype ♀, which is deposited in the collections of the Natural History Museum in Vienna (Naturhistorisches Museum Wien). This subjective synonymy has recently been published by Geiser (2010, p. 22).

3. *P. bicolor* Redtenbacher, 1868 is a common and widespread Oriental species which, under this name, is represented in many museum collections and has been cited repeatedly over the past 140 years (Gemminger & Harold 1869, p. 1721; Gerstaecker 1873, p. 158; Kirsch 1875, p. 38; Schaufuss 1887, p. 125; Gorham 1887, p. 77; 1895, p. 318; Bourgeois 1890, p. 188; Maxwell-Lefroy & Howlett 1909, p. 325; Pic, 1910, p. 53; 1923a, p. 44; 1923b, p. 72; 1926, p. 4; 1929, p. 2; Champion, 1919, p. 329; Miwa & Chujô, 1938, p. 23; Wittmer, 1938, p. 7; 1939, p. 130; 1941, p. 227; 1954, p. 28; Gressitt, 1939, p. 194; Crowson, 1964, p. 316; Mayor, 2007, p. 385; Geiser, 2007, p. 170). *P. bicolor* is the only name attributed to this species since 1868,

apart from the name *P. bicolor* var. *notaticollis* Pic, 1910 (p. 53), a junior synonym. Despite this, the name *P. bicolor* has not been used sufficiently often to allow its conservation under Article 23.9.2, but nomenclatural stability would be negatively affected by using *P. pertii* as valid name.

4. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power, under Article 81.2.3, to give the specific name *bicolor* Redtenbacher, 1868, as published in the binomen *Prionocerus bicolor*, precedence over the name *pertii* Laporte de Castelnau, 1836, as published in the binomen *Prionocerus pertii*, whenever the two are considered to be synonyms;
- (2) to place on the Official List of Specific Names in Zoology the name *bicolor* Redtenbacher, 1868, as published in the binomen *Prionocerus bicolor*, with the endorsement that it is to be given precedence over the name *pertii* Laporte de Castelnau, 1836, as published in the binomen *Prionocerus pertii*, whenever the two are considered to be synonyms;
- (3) to place on the Official List of Specific Names in Zoology the name *pertii* Laporte de Castelnau, 1836, as published in the binomen *Prionocerus pertii*, with the endorsement that it is not to be given priority over the name *bicolor* Redtenbacher, 1868, as published in the binomen *Prionocerus bicolor*, whenever the two are considered to be synonyms.

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Acknowledgement of receipt of this application was published in BZN 67: 2.

Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to the Executive Secretary, I.C.Z.N., c/o Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).

Case 3513

Chaetosoma Westwood, 1851, *Apodasya* Pascoe, 1863 and CHAETOSOMATIDAE Crowson, 1952 (Insecta, Coleoptera): proposed conservation

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Abstract. The purpose of this application, under Articles 23.9.3 and 81, is to maintain usage of the junior homonym *Chaetosoma* Westwood, 1851 and of the junior synonym *Apodasya* Pascoe, 1863 over the newly discovered older name *Chaetosoma* Chevrolat, 1843. The Commission is also asked to conserve the beetle family-group name CHAETOSOMATIDAE Crowson, 1952 by suppressing the older but permanently invalid nematode name CHAETOSOMATIDAE Claus, 1872.

Keywords. Nomenclature; taxonomy; Coleoptera; Cucujiformia; CLEROIDEA; Nematoda; CERAMBYCIDAE; CHAETOSOMATIDAE; *Chaetosoma*; *Apodasya*; *Apodasya pilosa*.

1. The genus *Chaetosoma* (Coleoptera: CERAMBYCIDAE) was first proposed by Dejean (1835, p. 340) in the second edition of the catalogue of his Coleoptera collection for one unavailable South African species, *C. pilosum* Dejean (nomen nudum). The name was used again by Dejean (1836, p. 366) in the third edition of his catalogue. In both instances, Dejean provided neither a description nor an indication for the new genus or species and therefore both names are unavailable from these publications.

2. Chevrolat (1843, p. 367) mentioned that Dejean proposed the genus *Chaetosoma* for one species, *C. pilosum*, which ‘ressemble un peu à une Saperde; elle est très velue; le 3e article des antennes est fort allongé; il offre près de l’extrémité quelques bouquets de poils espacés’ [somewhat resembles a *Saperda*; it is very hairy; the third antennal segment is very elongate; there are a few tufts of sparse setae near its extremity]. His description of the species made the genus and species names *Chaetosoma* and *Chaetosoma pilosum* Chevrolat, 1843 available. The name *Chaetosoma* Chevrolat, 1843 has been overlooked by all subsequent authors.

3. Westwood (1851, p. 171) described the genus *Chaetosoma* (Coleoptera, CLEROIDEA), totally unrelated to Chevrolat’s (1843) taxon, for a new species, *C. scaritides* Westwood (1851, p. 172), from New Zealand. The generic name *Chaetosoma* Westwood, 1851 is currently used as valid (e.g. Crowson, 1964; Crowson, 1972; Klimaszewski & Watt, 1997; Leschen, 2010).

4. Pascoe (1863, p. 54) described the genus *Apodasya* (Coleoptera: CERAMBYCIDAE) mentioning that the type and only species of the genus is ‘*Chaetosoma pilosum* of

Dejean's Catalogue.' He did not use the generic name *Chaetosoma* because it 'has been used for one of the CUCUJIDAE' (i.e. Westwood, 1851). The generic name *Apodasya* Pascoe, 1863 is currently used as valid (e.g. Breuning, 1962, 1966; Adlbauer, 2001; Delahaye, 2009). Its type species is *Apodasya pilosa* Pascoe, 1863, a junior subjective synonym of *Chaetosoma pilosum* Chevrolat, 1843. The genus includes three available species-group taxa in the Afrotropical Region.

5. Chevrolat's (1843) description of *Chaetosoma pilosum* was certainly based on the original specimen(s) of Dejean since Chevrolat had acquired Dejean's Longicornia specimens by the end of 1840 (Silbermann, 1840, p. 347). Chevrolat's main collection of Longicornia was deposited at the Natural History Museum, London (NHM), through J.C. Bowring in 1863 (Horn et al. 1990a, p. 72). There is currently one syntype of *C. pilosum* from Dejean's collection with his original label in the NHM (Sharon Shute pers. comm.). It is very likely that Pascoe had seen this syntype of *C. pilosum* at the time he described *Apodasya pilosum*. He did not refer to Chevrolat's (1843) description. Pascoe's (1863, p. 54) description of *Apodasya pilosum* was based on one specimen from C.O. Waterhouse's collection (now in Pascoe's collection, marked by Pascoe as 'Type'). Pascoe's collection was also deposited at the NHM in 1893 (Horn et al., 1990b, p. 296) and the holotype of *A. pilosa* is currently held at the NHM (Sharon Shute pers. comm.).

6. Claparède (1863, pp. 88–89) described the genus *Chaetosoma* (Nematoda) for the new species *C. ophicephalum*. As *Chaetosoma* had previously been used for a beetle genus, *Drepanonema* Cobb, 1933 (p. 81) and *Claparediella* Filipjev, 1934 (p. 21) have been proposed as replacement names for *Chaetosoma* Claparède, 1863.

7. Claus (1872, p. 312) established the family CHAETOSOMIDAE based upon the nematode genus *Chaetosoma* Claparède, 1863. Because the stem of its type genus is *Chaetosomat-*, this family-group name was corrected to CHAETOSOMATIDAE and used in this spelling by several authors subsequently (e.g. Shipley, 1916; Irwin-Smith, 1918; Baylis & Daubney, 1926). The type genus of CHAETOSOMATIDAE Claus, 1872 being a junior homonym, this family-group name is permanently invalid (Article 39 of the Code). A broadly equivalent taxon is currently known under the name DRACONEMATIDAE Filipjev, 1918.

8. Crowson (1952, p. 66) established the beetle family CHAETOSOMATIDAE for three New Zealand genera, *Chaetosoma* Westwood, 1851 (one species described so far), *Chaetosomodes* Broun, 1921 (one species) and *Metaxina* Broun, 1909. *Metaxina* was subsequently moved to a separate family, METAXINIDAE Kolibác, 2004 and one genus has been added to the family CHAETOSOMATIDAE, i.e. *Malgassochaetus* Ekiş & Menier, 1980 from Madagascar (eight species). This family-group name is currently used as valid in Coleoptera (e.g. Crowson, 1964, 1972; Ekiş & Menier, 1980; Menier & Ekiş, 1982; Menier, 1991; Klimaszewski & Watt, 1997; Kolibác, 2004; Beutel & Leschen, 2005; Leschen, 2010) and there is no other available name for this family.

9. Although the nematode family-group name CHAETOSOMATIDAE Claus, 1872 is permanently invalid because of the homonymy of its type genus, it is available as a senior homonym of the beetle name CHAETOSOMATIDAE Crowson, 1952 (Article 10.6 of the Code).

10. Usage of the newly discovered genus-group name *Chaetosoma* Chevrolat, 1843 threatens its junior homonym *Chaetosoma* Westwood, 1851 and its junior synonym *Apodasya* Pascoe, 1863. To our knowledge, *Chaetosoma* Chevrolat, 1843 has not

been used as valid since its establishment. However, *Chaetosoma* Westwood, 1851 and *Apodasya* Pascoe, 1863 have not been used in enough publications to apply Article 23.9.1.2 for the reversal of precedence. If *Chaetosoma* Chevrolat, 1843 is re-established, a new generic name would be needed to replace *Chaetosoma* Westwood, 1851 and the genus *Apodasya* would be known under the name *Chaetosoma* Chevrolat, 1843, which threatens stability. In addition, a new replacement name would be needed for the family CHAETOSOMATIDAE Crowson, 1952 because of the homonymy of its type genus.

11. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to suppress the generic name *Chaetosoma* Chevrolat, 1843 for both the Principle of Homonymy and the Principle of Priority;
- (2) to suppress the family-group name CHAETOSOMATIDAE Claus, 1872 (originally proposed as CHAETOSOMIDAE) for both the Principle of Homonymy and the Principle of Priority;
- (3) to place on the Official List of Generic Names in Zoology the following names:
 - (a) *Chaetosoma* Westwood, 1851 (gender: neuter), type species by monotypy *Chaetosoma scaritides* Westwood, 1851;
 - (b) *Apodasya* Pascoe, 1863 (gender: feminine), type species by original designation and monotypy *Apodasya pilosa* Pascoe, 1863 (a junior subjective synonym of *Chaetosoma pilosum* Chevrolat, 1843);
- (4) to place on the Official List of Specific Names in Zoology the following names:
 - (a) *scaritides* Westwood, 1851, as published in the binomen *Chaetosoma scaritides* (specific name of the type species of *Chaetosoma* Westwood, 1851);
 - (b) *pilosum* Chevrolat, 1843, as published in the binomen *Chaetosoma pilosum* (valid specific name of the type species of *Apodasya* Pascoe, 1863);
- (5) to place on the Official List of Family-Group Names in Zoology the name CHAETOSOMATIDAE Crowson, 1952, type genus *Chaetosoma* Westwood, 1851;
- (6) to place on the Official Index of Rejected and Invalid Generic Names in Zoology the name *Chaetosoma* Chevrolat, 1843 (gender: neuter), type species by monotypy *Chaetosoma pilosum* Chevrolat, 1843;
- (7) to place on the Official Index of Rejected and Invalid Family-Group Names in Zoology the name CHAETOSOMATIDAE Claus, 1872 (originally published as CHAETOSOMIDAE), type genus *Chaetosoma* Claparède, 1863.

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Acknowledgement of receipt of this application was published in BZN **67**: 2.

Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to the Executive Secretary, I.C.Z.N., c/o Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).

Case 3517

LATRIDIIDAE Erichson, 1842 (Insecta, Coleoptera): proposed precedence over CORTICARIIDAE Curtis, 1829; and *Corticaria* Marsham, 1802: proposed conservation of usage by designation of *Corticaria ferruginea* Marsham, 1802 as the type species

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Abstract. The purpose of this application, under Articles 23.9.3 and 70.2 of the Code, is to conserve the usage of the CUCUJOIDEA family name LATRIDIIDAE Erichson, 1842 by giving it precedence over the senior name CORTICARIIDAE Curtis, 1829, and to conserve the current usage of the widely used name *Corticaria* Marsham, 1802 by designation of *Corticaria ferruginea* Marsham, 1802 as the type species.

Keywords. Nomenclature; taxonomy; Coleoptera; CUCUJOIDEA; LATRIDIIDAE; LATRIDIIDAE; CORTICARIIDAE; *Corticaria*; *Lathridius*; *Latridius*; *Corticaria ferruginea*.

1. In conjunction with an illustration (Curtis, 1829, pl. 283) and description (unpaginated pages related to pl. 283) of *Bitoma crenata* (Fabricius, 1775), Curtis introduced without comment the family-group name CORTICARIDAE, based on *Corticaria* Marsham, 1802. Because of the incorrect original stem formation, the spelling of the family-group name was subsequently corrected to CORTICARIIDAE. As seen by searches through the Zoological Record, the corrected spelling is in prevailing usage and is to be maintained under Article 29.5 of the Code.

2. Erichson (1842, p. 122) proposed the family-group name Lathridien based on the genus *Lathridius*, established originally by Herbst (1793, p. 2) under the spelling *Latridius*. The original generic name was subsequently emended to *Lathridius* by Illiger (1802, p. 140) who mentioned that the etymology of the name was from the Greek λατρίδιος, meaning obscure, secretive.

3. Despite having been proposed as a vernacular name, Erichson's name Lathridien is available because it has been latinised by later authors and is generally accepted by authors interested in the group as valid and as dating from that first publication as a vernacular name (Article 11.7.2 of the Code). For example, the family-group name LATRIDIIDAE or LATRIDIINAE Erichson, 1842 has been listed as valid in the following recent publications: Lawrence & Newton (1995, p. 886); Hansen

(1996, p. 166); Andrews (2002, p. 395); Johnson (2007b, p. 635); Bouget & Vincent (2008, p. 101); Hartley & McHugh (2010, p. 481).

4. Since Melsheimer (1853) and Lacordaire (1854), virtually all authors have placed *Corticaria* and *Latridius* in the same family and until 1994 used LATRIDIIDAE (often under the spelling LATHRIDIIDAE) as the valid name. The type species of *Latridius* Herbst, 1793 is *Latridius porcatus* Herbst, 1793 (p. 6) by subsequent designation by Latreille (1810, p. 431).

5. Pakaluk et al. (1994, pp. 227, 252) established that the family-group name CORTICARIIDAE was older than that of LATRIDIIDAE and used it as the valid name of the family. Subsequently, CORTICARIIDAE has been used as the valid name for the beetle family by a small number of authors (e.g. Lundberg, 1995; Hansen, 1996; Vorst & Cuppen, 2000; Mika, 2000; Hůrka, 2005). In the same period, the name LATRIDIIDAE has also been used, much more extensively (as seen by searches through the Zoological Record between 1995 and 2010), as the valid name of the family, including in some significant recent contributions (e.g. Lawrence & Newton, 1995; Andrews, 2002; Beutel & Leschen, 2005; Johnson, 2007b; Johnson & Růcker, 2007; Bouget & Vincent, 2008; Hartley & McHugh, 2010).

6. No type species was originally designated for *Corticaria*. The first valid type species designation for *Corticaria* Marsham, 1802 is that of Gozis (1886, p. 10), who selected *Lyctus politus* Fabricius, 1793, a junior subjective synonym of *Ips picipes* Olivier, 1790, one of the numerous available species listed by Marsham (1802, pp. 106–113) in his new genus *Corticaria*. This species is currently included in the genus *Rhizophagus* Redtenbacher, 1845 of the family MONOTOMIDAE Laporte, 1840. Prior to Gozis's action, the type species mentioned by some authors (e.g. Westwood, 1838, p. 15; Duponchel, 1843, p. 258; Thomson 1859, p. 94) was *Latridius pubescens* Gyllenhal, 1827, a species not originally included in *Corticaria*. As far as we know, the next valid type species designation for *Corticaria* is that of Dajoz (1967, p. 604), who designated *Dermestes longicornis* Herbst, 1783 (p. 23) as the type species. This species was originally included in *Corticaria*, as a synonym of *Ips impressa* Olivier, 1790, but has been misidentified by all authors, including Marsham (1802), until Johnson (2007a, p. 76) selected a lectotype and pointed out that the name is a senior synonym of *Corticaria abietorum* Motschulsky, 1867. Because of the past confusion, usage of this species as type species of *Corticaria* is not in the best interests of nomenclatural stability. Subsequently, Dajoz (1975, p. 205) designated *Corticaria ferruginea* Marsham, 1802 as the type species, also a species originally included in *Corticaria*, and *C. ferruginea* is the taxon currently considered to be as type species of *Corticaria* (e.g. Johnson, 2007, p. 641). Acceptance of the first valid type species designation, that of Gozis (1886, p. 10), would not promote stability since the genus *Corticaria* as currently defined, which includes more than 130 species in the Palaearctic and Nearctic Regions alone, would take the next available name *Parascheva* Gozis, 1886 (type species by original designation *Latridius pubescens* Gyllenhal, 1827). To our knowledge, this generic name has never been used as valid subsequent to Gozis (1886). In addition, the generic name *Rhizophagus* Redtenbacher, 1845, which comprises about 50 species in the Nearctic, Palaearctic and Oriental Regions, would become a subjective junior synonym of *Corticaria* Marsham, 1802 because *Lyctus bipustulatus* Fabricius, 1793, the type species of *Rhizophagus*, is congeneric with *Lyctus politus* Fabricius, 1793.

7. Until the early 1990s, the unjustified emendation *Lathridius* was in prevailing usage as seen by searches through the Zoological Record. Since then, the original spelling *Latridius* is in prevailing usage and has been used in all significant publications (e.g. Lawrence & Newton, 1995, p. 886; Andrews, 2002, p. 395; Johnson, 2007, p. 635; Hartley & McHugh, 2010, p. 481).

8. The family LATRIDIIDAE, the minute brown scavenger beetles, is moderately diverse, with over a thousand species in the world. Many of them are regularly associated with stored products as the adults and larvae feed on the conidia of fungi and Myxomycetes (Andrews, 2002) often found on damp and mouldy products. There is an extensive taxonomic, faunistic, and ecological literature on these beetles dating back to the middle of the 19th century. Consequently, to use the senior name CORTICARIIDAE instead of LATRIDIIDAE for the family name would not promote stability.

9. The International Commission on Zoological Nomenclature is accordingly asked:

(1) to use its plenary power:

(a) to rule that the family-group name LATRIDIIDAE Erichson, 1842 and other family-group names based on *Latridius* Herbst, 1793 are to be given precedence over CORTICARIIDAE Curtis, 1829 and other family-group names based on *Corticaria* Marsham, 1802 whenever their type genera are placed in the same family-group taxon;

(b) to set aside all type species designations for *Corticaria* Marsham, 1802 prior to that of *Corticaria ferruginea* Marsham, 1802 by Dajoz (1975);

(2) to place on the Official List of Generic Names in Zoology the following names:

(a) *Latridius* Herbst, 1793 (gender: masculine), type species by subsequent designation by Latreille (1810) *Latridius porcatus* Herbst, 1793;

(b) *Corticaria* Marsham, 1802 (gender: feminine), type species by subsequent designation of Dajoz (1975) *Corticaria ferruginea* Marsham, 1802 as ruled in (1) above;

(3) to place on the Official List of Specific Names in Zoology the name *ferruginea* Marsham, 1802 as published in the binomen *Corticaria ferruginea* (specific name of the type species of *Corticaria* Marsham, 1802);

(4) to place on the Official List of Family-Group Names in Zoology the following names:

(a) CORTICARIIDAE Curtis, 1829, type genus *Corticaria* Marsham, 1802, with the endorsement that it and other family-group names based on *Corticaria* are not to be given priority over LATRIDIIDAE Erichson, 1842 and other family-group names based on *Latridius* Herbst, 1793 whenever their type genera are placed in the same family-group taxon;

(b) LATRIDIIDAE Erichson, 1842, type genus *Latridius* Herbst, 1793, with the endorsement that it and other family-group names based on *Latridius* are to be given precedence over CORTICARIIDAE Curtis, 1829 and other family-group names based on *Corticaria* Marsham, 1802 whenever their type genera are placed in the same family-group taxon;

(5) to place on the Official Index of Rejected and Invalid Family-Group Names in Zoology LATHRIDIEN Erichson, 1842 (an incorrect original spelling for LATRIDIIDAE Erichson, 1842).

Acknowledgements

We would like to thank John Lawrence, Joseph McHugh and Kelly Miller for reviewing an earlier draft of this manuscript and for numerous helpful discussions pertaining to the nomenclature of LATRIDIIDAE.

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Acknowledgement of receipt of this application was published in BZN **67**: 2.

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Case 3482

***Psittacus tenuirostris* Kuhl, 1820 and *Licmetis pastinator* Gould, 1841 (currently *Cacatua tenuirostris* and *Cacatua pastinator*; Aves, Psittaciformes): conservation of usage by designation of a neotype for *Psittacus tenuirostris* Kuhl, 1820**

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Abstract. The purpose of this application, under Article 75.6 of the Code, is to conserve prevailing usage of the species group names *tenuirostris* Kuhl, 1820 and *pastinator* Gould, 1841, long employed for the southeastern and respective southwestern species of Australian long-billed corellas, genus *Cacatua* Vieillot, 1817. The only apparently traceable syntype of *tenuirostris* Kuhl has been found to be of the southwestern species; the resulting nomenclatural shift would destabilise established usage and confound past and future references to the name in literature. To conserve the long-accustomed use of *tenuirostris* Kuhl for the southeastern corella and to maintain *pastinator* Gould as the valid name for the southwestern long-billed corella, we propose that the only known syntype of *tenuirostris* Kuhl be set aside and replaced with a neotype of the southeastern species.

Keywords. Nomenclature; taxonomy; CACATUIDAE; *Cacatua tenuirostris*; *Cacatua pastinator*; cockatoos; long-billed corella; Australia.

1. Since 1912 (Mathews, 1912, p. 266), the southeastern Australian long-billed corella has been known as *Cacatua tenuirostris* (Kuhl, 1820); and since 1841 (Gould, 1841, p. 175), the similar-looking long-billed corella of southwestern Australia has been known as *Cacatua pastinator* (Gould, 1841) whenever that species has been treated as distinct. Both species have high profiles in Australian ornithology and the human community, as pest species in agriculture, as threatened fauna in wildlife legislation, and in aviculture. Their respective names, accordingly, are in wide use in Australia and internationally, in handbooks (Schodde & Tiedemann, 1986; del Hoyo et al., 1997; Higgins, 1999; Beruldsen, 2003), field guides (Pizzey & Knight, 1997; Simpson & Day, 1999), checklists (Checklist Committee RAOU 1926; Peters, 1937;

Condon, 1975; Sibley & Monroe, 1990; Schodde, 1997; Dickinson, 2003; Gill & Wright, 2006; Christidis & Boles, 2008), monographs of Psittaciformes (Lendon, 1973; Forshaw, 1978, 1981), avicultural manuals (Shephard, 1989), Australian bird atlases (Blakers et al., 1984; Barrett et al., 2003), scientific journals (Schodde et al., 1979; Ford, 1985; Smith, 1991), and action plans for avifaunal conservation (Garnett & Crowley, 2000). Overall, the names have been employed for respective southeastern and southwestern species for a century and more, in hundreds of references.

2. Because Heinrich Kuhl and C.J. Temminck often worked side by side when they visited England in 1819 to work over collections of parrots, even describing new species jointly, it has commonly been presumed that specimen material on which Temminck based new species was also seen and used by Kuhl (e.g. Mathews, 1925, p. 135; Schodde, 1997, p. 97). On that visit, Temminck (1821, p. 115) described *Psittacus nasicus* from a single specimen of the southeastern Australian corella in the collection of the Linnean Society of London. It had been collected by Robert Brown at Port Phillip Bay, Victoria, on Matthew Flinders' circumnavigation of Australia in 1801–1803. So it has been thought that Kuhl (1820, p. 88) used the same material for his earlier description of *Psittacus tenuirostris* (Dickison, 1928, p. 82; Whittell, 1954, p. 53 (part 1); Schodde, 1997, p. 97). In his original and only description of *P. tenuirostris*, Kuhl (1820, p. 88) nevertheless recorded specimens of long-billed corellas only 'In Museo Parisiensi, Bruksiano Londinensi', from no more a precise location than 'Nova Hollandia'. No mention is made of any material in the collection of the Linnean Society or British Museum; and the description itself, simple and general, fits both southeastern and southwestern corellas.

3. Although it is possible that the London specimen (or specimens) in the 'Museum Bruksianum' (= Anatomical and Zootomical Museum of Joshua Brookes = Brookesian Museum of Comparative Anatomy) was of the southeastern species, also from Flinders' voyage and somehow acquired when the original Flinders collections in the British Museum began to disappear (Mathews, 1925, p. 19 – see under Brown, Robert), there is no firm evidence. The birds in the Brookes Museum were themselves sold off and dispersed in 1830 (Mathews, 1925, p. 19 – see under Brookes, Joshua), and appear to have perished; we have not traced any. Mathews (1925) quotes the Brookes sale catalogue listing a *Plyctolophus macrorhamphus* (nomen nudum), which may have been a syntype of *Psittacus tenuirostris* Kuhl, but again evidence is lacking. It is also possible that a study skin of the southeastern species in the National Museum of Natural History (Naturalis), Leiden, obtained by Temminck came from the Brookes Museum, as Temminck is known to have bought material from Brookes (J. van Tol, pers. comm.). It is annotated 'Psittacus nasicus Nov. Holl. Mér.' (= southern Australia) in Temminck's hand, but is not the holotype of *nasicus* Temminck, which passed directly to the British Museum from the Linnean Society in 1863 (Sharpe, 1906, pp. 254–255; Mathews, 1925, p. 19) where it remains today (NHM 1863.7.6.3). Nevertheless, neither labelling nor the archives of the Naturalis Museum hold any information connecting the Leiden skin to the Brookes Museum (J. van Tol, pers. comm.). Nor was it recognised as a type of either *Psittacus tenuirostris* Kuhl or *P. nasicus* Temminck by van den Hoek Ostende et al. (1997) in their list of avian non-passerine types in the Naturalis Museum. So, after extensive search and correspondence, we can find no evidence that it was seen by Kuhl for his description of *Psittacus tenuirostris*; it may well have come directly from the British Museum, with which Temminck also dealt.

Table 1. Measurements of the southeastern long-billed corella (*Cacatua tenuirostris*) and present southern and northern populations of the southwestern corella (*Cacatua pastinator*), in comparison with those of the Paris syntype of *Psittacus tenuirostris* Kuhl, 1820 and the three specimens of southwestern corella in the Academy of Natural Sciences, Philadelphia, presumed from the Swan River region. Ranges of measurements cover 95% of individuals. Wing measured as the flattened chord from the shoulder, crest measured and flattened, from its base on the skull to its tip.

Taxon	Sex	n	Crest	Wing	Tail/wingratio	Culmen	Mean culmen/ wing ratio
<i>Cacatua tenuirostris</i>	male	41	28–34	270–285	0.43–0.46	–	–
<i>Cacatua tenuirostris</i>	female	44	28–34	267–280	0.43–0.47	–	–
Type of <i>Psittacus</i> <i>tenuirostris</i> Kuhl (MHNP 2004–77)	unsexed	–	52	296	0.50	43.0+	0.145
<i>Cacatua pastinator</i> (southern isolate)	male	15	48–60	305–320	0.48–0.51	45.0–52.0	0.153
<i>Cacatua pastinator</i> (southern isolate)	female	19	45–60	300–315	0.48–0.52	44.0–49.0	0.147
ANSP 22244	male	–	51	310	0.52	43.1	0.139
ANSP 22245	male	–	53	314	0.47	43.7	0.139
ANSP 22243	female	–	46	309	0.48	43.8	0.142
<i>Cacatua pastinator</i> (northern isolate)	male	42	46–57	290–315	0.46–0.50	40.0–46.0	0.141
<i>Cacatua pastinator</i> (northern isolate)	female	44	43–56	285–305	0.47–0.51	38.0–43.0	0.137

4. One specimen that would have been used by Kuhl – the only one that we can confirm – is the single pre-1819 study skin of a corella with a long bill in the Muséum national d’Histoire naturelle, Paris (Voisin & Voisin, 2008, p. 472). Registered in the Catalogue Général with number 2004 – 77 (formerly Nouveau Catalogue 722 and Ancient Catalogue 1559), it is of the western corella, *Cacatua pastinator* (Gould, 1841). It has the wing structure of that species and, although faded, lacks the reddish peri-orbital wash and pale scarlet pectoral bar of down characteristic of the southeastern species (see Schodde et al., 1979 for traits). It also fits the southwestern, not southeastern, species in measurements (mm): wing 296, tail 147, and crest 52 (Table 1). Collected by the Expedition Baudin without locality or any other field data, this specimen was probably taken in 1801 or 1804 on the Swan River or in Geographe Bay in southwestern Australia, the only landfalls made by that expedition in the then range of the western corella (Whittell, 1954, part 1, pp. 58–69).

5. The consequences of this finding will not only disrupt and destabilise established nomenclature for Australia’s long-billed corellas but also confuse it by shifting the name *tenuirostris* Kuhl, 1820 from one taxon to another, thereby confounding past and future references to the corellas in literature. In these circumstances, we believe that the simplest solution for maintaining accustomed usage for both southeastern and southwestern species would be to replace the only known extant syntype of *tenuirostris* Kuhl with a neotype of the southeastern species under Article 75.6 of the Code.

6. As an appropriate neotype, we have considered both the holotype of *Psittacus nasicus* Temminck in the Natural History Museum, London (NHM 1863.7.6.3) and a modern, soundly prepared specimen in an Australian national museum. Guiding our considerations have been presumed type locality, security, accessibility for study,

state of preservation and condition, and expression of the critical identification features of the southeastern species. The presumed type locality of *tenuirostris* Kuhl has been Port Phillip Bay (Dickinson, 1928, p. 82; Whittell, 1954, p. 53 (part 1); Schodde, 1997, p. 97), the same source as *nasicus* Temminck. Yet it can be argued that because Kuhl designated its type locality simply as 'Nova Hollandia', and certainly included the southwestern species in the original description, any locality within the range of the southeastern species would be satisfactory for *tenuirostris* (cf. Article 75.3.6 of the Code). Note here that recent taxonomic study has found the southeastern species to be monotypic, with a restricted range in southeastern Australia from southeast South Australia through southwest Victoria to the Riverina region in south central New South Wales (Schodde 1984). For security, the Natural History Museum, London has an unquestionable reputation, yet Australian national museums are arguably as safe. All, particularly the national biological collections operated by the Commonwealth Scientific and Industrial Research Organisation (CSIRO), have first-class curatorial practices, and secure, air-conditioned housing facilities second to none. Users are central to the issue of accessibility for study; and most will be Australian: having type material available in Australia will be more convenient to them than in an institution on the other side of the world. Of course, digital scanning simplifies access everywhere today – but we have found in ornithological practice that scanned images and reliance on externally provided data imposes on others and is rarely quite as convincing or reliable as a specimen in the hand. Ultimately, we have been swayed by the condition of the holotype of *nasicus* and its expression of the traits of the southeastern species. Now over two centuries old and prepared with late 18th century technology, this specimen is beginning to disintegrate and has to be kept in a plastic bag. It is also unsexed and so dirty and ragged about the head and breast that diagnostic morphological traits are no longer clear. We do not believe that it would provide a satisfactory neotype for *Psittacus tenuirostris* Kuhl; and accordingly we propose instead specimen ANWC 37645, adult male, from Moira State Forest, Mathoura, south central New South Wales, collected on 27 February 1983, and lodged in the Australian National Wildlife Collection, CSIRO, Canberra, Australia. This specimen shows all traits described for the southeastern Australian species by Schodde et al. (1979) and in Higgins (1999).

7. In support of this action, we also propose that the names *tenuirostris* Kuhl, 1820 and *pastinator* Gould, 1841 for the southeastern and southwestern Australian long-billed corellas, respectively, be placed on the Official List of Specific Names in Zoology, to settle their application. For this, the type material of *pastinator* Gould needs to be established. In his original description of *pastinator*, Gould (1841, p. 175) specified neither specimens nor a locality more precise than 'Western Australia'. After a search of relevant European and North American museums, only three candidate types have been found, all in the collections of the Academy of Natural Sciences, Philadelphia: two in its Gould Collection (ANSP 22243 ♀, 22244 ♂) and a third, traded from Gould, in the Duke of Rivoli Collection (ANSP 22245 ♂). Stone in Stone and Mathews (1913) identified one of them as the type (i.e. lectotype) (ANSP 22244), but Meyer de Schauensee (1957) did not accept it. Neither its measurements, nor those of the others (Table 1), match those of the converted measurements in Gould's original description of *pastinator* particularly closely. Judged by the high standard of their preparation, all three specimens *may* have been collected by John Gilbert on one or

both of his two visits to southwest Australia in March 1838 – January 1840 and July 1842 – December 1843, but there is no collector's name on any of the specimens. The dates are important because Gould first reported on *pastinator* on 25 October 1840 (Gould, 1841). Thus only specimens from Gilbert's first expedition, the last of which were despatched to London on the *Shepherd* on 1 January 1840 (Whittell, 1942a), come into contention as types. Unfortunately, none of the Gould corellas in ANSP are labelled with date of collection, nor do other records shed any light on that matter. Inventories of material gathered by Gilbert in Western Australia are incomplete for both expeditions (Whittell, 1941, 1942a, b); the only mention of corellas is of a skeleton taken on the first and of eggs taken on the second. Therefore it is not possible to establish whether any of the three specimens were available to Gould for his description of *pastinator*, adding to doubt about their status as types.

8. Complicating the issue is taxonomic differentiation: populations of the western long-billed corella are separated today in two morphometrically disparate subspecies, one in far southwest Australia some 200 km south of Perth, and the other well to the north of that city (Table 1). Ford (1987) used an innovative approach to work out the subspecies to which Gould's name *pastinator* applied. Extrapolating the measurements in Gould's original description multivariately against those of southern and northern forms, he concluded that they applied to the southern form (also Schodde 1997, p. 93). Consequently, *pastinator* Gould has been used for the physically larger southern subspecies ever since, and even before (e.g. Schodde et al., 1979; Ford, 1987; Schodde, 1997; Johnstone & Storr, 1998; Higgins, 1999; Dickinson, 2003). In contrast, the *unconfirmed* type material of the southwestern long-billed corella in the Academy of Natural Sciences in Philadelphia is clearly of the northern subspecies, judged by both length of bill and bill/wing ratios (Table 1).

9. To establish the application of *pastinator* unambiguously in the absence of confirmed type material, Schodde (1997, p. 93) took the step of designating a neotype from the population of the southern subspecies in southwestern Australia: WAM A18537, adult female, from Nabagup Farm, Lake Muir, far southwest Australia. This designation conserves prevailing usage, and satisfies collectively: (1) Article 75.3.1 of the Code by clarifying the taxonomic identity of the nominal taxon, (2) Article 75.3.2 by giving bibliographic references to its differentiating characters, (3) Article 75.3.3 by providing the necessary data to identify the neotype specimen, (4) Article 75.3.4. by giving reasons for believing that the original type material cannot be reliably traced, (5) Article 75.3.5 by referring to evidence that the neotype is consistent with the original description of original type material, (6) Article 75.3.6 by selecting the neotype from within the original type locality: 'western Australia', and (7) Article 75.3.7 by designating a specimen in a recognised scientific institution, the Western Australian Museum. We recommend acceptance of this designation.

10. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to set aside all previous type fixations for *Psittacus tenuirostris* Kuhl, 1820 and to designate specimen ANWC 37645 lodged in the Australian National Wildlife Collection, CSIRO, Canberra, Australia as the neotype;
- (2) to place on the Official List of Specific Names in Zoology the name *tenuirostris* Kuhl, 1820, as published in the binomen *Psittacus tenuirostris* and as defined by the neotype designated in (1) above.

- (3) to place on the Official List of Specific Names in Zoology the name *pastinator* Gould, 1841, as published in the binomen *Licmetis pastinator* and as defined by the neotype WAM A18537 lodged in the Western Australian Museum.

Acknowledgements

We are grateful to Robert Prys-Jones (*Ornithological section of the Natural History Museum at Tring*) for facilities to examine the holotype of *Psittacus nasicus* Temminck, and to Jan van Tol (*Department of Terrestrial Zoology at the National Museum of Natural History, Leiden*) for alerting us to a Temminck specimen of a long-billed corella in Leiden and for providing, with the help of Chris Smeenk, information on its source.

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Acknowledgement of receipt of this application was published in BZN **66**: 1.

Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to the Executive Secretary, I.C.Z.N., c/o Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).

Case 3515***Rhynchotherium* Falconer, 1868 (Mammalia; Proboscidea): proposed conservation of usage by designation of *Rhynchotherium falconeri* Osborn, 1923 as the type species**

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Abstract. The purpose of this application, under Article 81.1 of the Code, is to conserve the long and widely used name *Rhynchotherium* Falconer, 1868, applied to proboscidean fossils from North America, by designating *Rhynchotherium falconeri* Osborn, 1923 as the type species. It has long been agreed that the cast of the holotype of *R. tlascae* Osborn, 1918, the type species of *Rhynchotherium*, belongs to the genus *Gomphotherium* Burmeister, 1837, so preservation of the present usage of the genus name *Rhynchotherium* requires a type species that fits the current concept of the genus. It is proposed that *Rhynchotherium falconeri* Osborn, 1923 be designated the type species.

Keywords: Nomenclature; taxonomy; Mammalia; Proboscidea; North America; Mexico; *Rhynchotherium*; *Gomphotherium*; *Rhynchotherium tlascae*; *Rhynchotherium falconeri*.

1. Falconer (1868, p. 74) used the generic name *Rhynchotherium* (without a species name) for the plaster cast of a lower jaw of a fossil proboscidean from Mexico in the Muséum d'Histoire Naturelle, Geneva, Switzerland. The cast is still present in two pieces in the Geneva Museum collection under catalogue number 850.01 (Tobien, 1973; Lucas & Morgan, 2008). Falconer (1868, p. 74–75) did describe the lower jaw, and also distinguished it from species of the genus ‘*Mastodon*,’ so the name *Rhynchotherium* Falconer, 1868 is available according to the criteria set forth in Articles 11 and 12.

2. Osborn (1918, p. 135) introduced the new species name *Rhynchotherium tlascae* for this cast. Osborn (1921) repeated the essential content of his 1918 paper, but emended the spelling of the name to *R. tlascae*. This is not a justified emendation according to the standards of Article 32.5 of the Code, especially as the preferred spelling of the Mexican state from which the species name was derived is Tlaxcala (although Osborn, 1918, in a footnote (p. 135) spelled it as ‘Tlasca’). However, the unjustified emendation *tlascae* is in prevailing usage, so in accordance with Article 33.2.3.1 it should be regarded as a justified emendation.

3. No species was included in *Rhynchotherium* until Osborn (1918) used the name *Rhynchotherium tlascae* (currently *R. tlascae*) for this cast, thus fixing the type species as *R. tlascae* by subsequent monotypy. The whereabouts of the holotype (the model of the cast) have been unknown since Falconer (1868) (see Tobien, 1973; Lucas & Morgan, 2008). All subsequent workers have acknowledged *R. tlascae* as

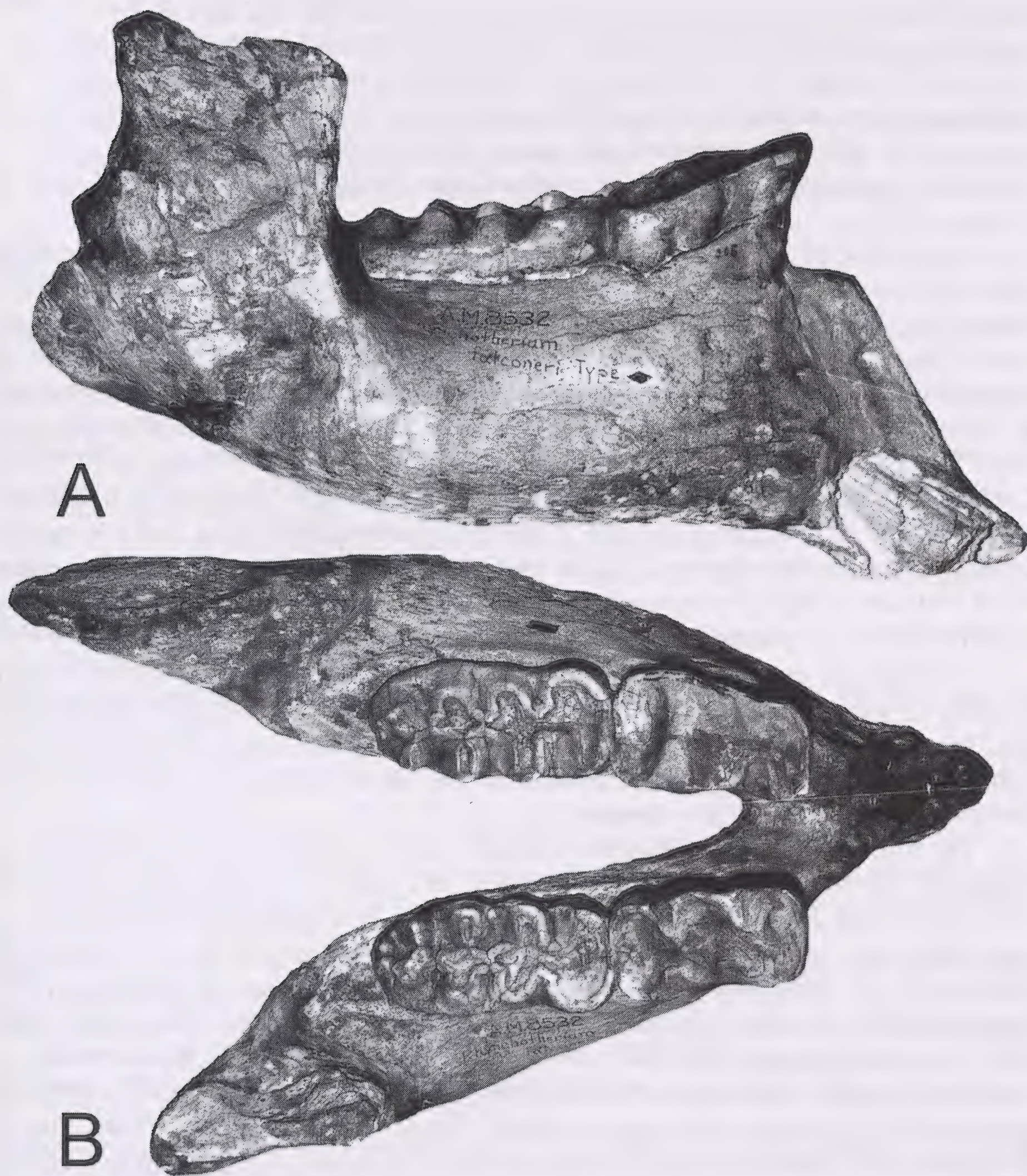


Fig. 1. *Rhynchotherium falconeri* Osborn, 1923; holotype AMNH 8532 (American Museum of Natural History, New York), lower jaw, in right lateral (A) and occlusal (B) views. For scale, the last lower molar is 174 mm long.

the type species of *Rhynchotherium* (e.g. Osborn, 1923, 1936; Tobien, 1973; Mebrate, 1987; Miller, 1980, 1990; Pasenko, 2000, 2007; Lucas et al., 1997; Lucas & Morgan, 1996, 2005, 2008).

4. Osborn (1921, p. 5, fig. 2C) illustrated jaws of both *Gomphotherium* and *Rhynchotherium* morphology, referring both to *Rhynchotherium*. However, most workers have used the name *Rhynchotherium* for a distinctive proboscidean genus with a jaw, molar and tusk morphology that distinguishes it from the closely related genus *Gomphotherium* Burmeister, 1837 (p. 795) (type species *Mastodon angustidens* Cuvier, 1817).

5. Tobien (1973, pp. 237–238, pl. 24, fig. 11, pl. 26, fig. 27) provided a detailed description and illustrations of the cast of the holotype of *Rhynchotherium tlascae*. He cogently argued that the plaster cast of the jaw from Tlaxcala, Mexico, which is all that is known of the holotype of *Rhynchotherium tlascae*, is actually the cast of a jaw of a different gomphothere genus, *Gomphotherium* Burmeister, 1837, a conclusion accepted by subsequent workers (see above and summary by Lucas & Morgan, 2008).

6. May (1981, p. 164) took this to one possible logical conclusion by considering *Rhynchotherium* Falconer, 1868, to be a junior subjective synonym of *Gomphotherium* Burmeister, 1837. However, all other workers have retained the long and widely-used generic name *Rhynchotherium*, even if its type species is based on the plaster cast of a specimen of another genus (e.g. Dalquest, 1975; Carranza-Castañeda, 1976; Kurtén & Anderson, 1980; Miller, 1980, 1990; Webb & Perrigo, 1984; Lucas & Morgan, 1996, 2005, 2008; Lucas et al., 1997; McKenna & Bell, 1997; Pasenko, 2000, 2007; Corona-M. & Alberdi, 2006). This incorrect usage apparently reflected an unwillingness to name a new genus for the distinctive proboscidean long but incorrectly referred to as *Rhynchotherium*. (I have provided the Commission Secretariat with a list of 100 uses of *Rhynchotherium* by 134 authors during the period 1868–2009; many more could be compiled).

7. Preservation of the long and widely-used genus name *Rhynchotherium* is only possible by use of the plenary power of the Commission to fix another type species for the genus that fits the longstanding concept of the genus *Rhynchotherium*. Otherwise, *Rhynchotherium* will remain a junior synonym of *Gomphotherium*, disrupting long and universal usage.

8. The solution that best serves the stability and universality of nomenclature is to designate *Rhynchotherium falconeri* Osborn, 1923 (p. 3) as the type species of *Rhynchotherium*. *R. falconeri* is based on a lower jaw from the Pliocene of Texas that has long been recognised as a member of *Rhynchotherium* as it is currently understood, i.e. *Rhynchotherium* as distinct from *Gomphotherium* (e.g. Tobien, 1973; Dalquest, 1975; Carranza-Castañeda, 1976; Kurtén & Anderson, 1980; Miller, 1980, 1990; Lucas & Morgan, 1996, 2005, 2008; Pasenko, 2000, 2007). *R. tlascae* was the first species validly included in *Rhynchotherium*, but it does not agree with the current usage, while *R. falconeri*, the oldest available name of a species of *Rhynchotherium* in its current sense fully agrees with modern usage. It is based on a diagnostic holotype specimen extant in a collection. It is based on the holotype lower jaw in the American Museum of Natural History, New York, U.S.A., catalogue no. 8532 (Lucas & Morgan, 2008).

9. If the name *Rhynchotherium* is not conserved as proposed here, then a new name will have to be created to refer to the distinctive proboscidean genus termed *Rhynchotherium* since 1868 (and its six nominal species) and more than a century of use of this universally accepted name in hundreds of palaeontological publications will become obsolete causing considerable confusion.

10. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to set aside all fixations of type species for *Rhynchotherium* Falconer, 1868 and to designate *Rhynchotherium falconeri* Osborn, 1923 as the type species of the genus *Rhynchotherium*;

- (2) to place on the Official List of Generic Names in Zoology the name *Rhynchotherium* Falconer, 1868 (gender: neuter), type species *Rhynchotherium falconeri* Osborn, 1923, as ruled in 1 (above);
- (3) to place on the Official List of Specific Names in Zoology the name *falconeri* as published in the binomen *Rhynchotherium falconeri* Osborn, 1923 (specific name of the type species of *Rhynchotherium*, as ruled in 1 (above)).

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Acknowledgement of receipt of this application was published in BZN **67**: 2.

Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to the Executive Secretary, I.C.Z.N., c/o Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).

Comment on the proposed conservation of the specific name *Phreatamoeba balamuthi* Chávez, Balamuth & Gong, 1986 (currently *Mastigamoeba balamuthi*; Protista, Pelobiontida)
(Case 3362; see BZN 64: 213–217)

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The application to conserve the specific name *Phreatamoeba balamuthi* Chávez, Balamuth & Gong, 1986 (currently *Mastigamoeba balamuthi*) for a free-living, polymorphic pelobiont, by suppression of its senior subjective synonym *Mastigamoeba longifilum* Stokes, 1886 will not establish the stability being sought. The references cited in the application point to an unpublished review by Walker and Patterson. Because of the poor taxonomic standards of most descriptions in this genus and the absence of type material, this review concludes that the following taxa are subjective synonyms of *Mastigamoeba longifilum*:

Mastigamoeba balamuthi (Chávez, Balamuth & Gong, 1986) Simpson et al., 1997
Mastigamoeba buetschlii Klebs, 1892 (= *M. lobata* sensu Stein, 1878, non Dujardin, 1841)

Mastigamoeba coprophila Lepši, 1965

Mastigamoeba euglenoides Skuja, 1939

Mastigamoeba flexuosa Stokes, 1888

Mastigamoeba incerta Lepši, 1965

Mastigamoeba invertens Klebs, 1892

Mastigamoeba lacustris (Penard, 1909) Lemmermann, 1914

Mastigamoeba limax Moroff, 1904

Mastigamoeba nilensis Wawrik, 1960

Mastigamoeba pachyderma Skuja, 1948

Mastigamoeba paramylon (Frenzel, 1897) Lemmermann, 1914

Mastigamoeba psammobia Larsen & Patterson, 1990

Mastigamoeba radricula Moroff, 1904

Mastigamoeba ramulosa Kent, 1880

Mastigamoeba reptans Stokes, 1890

Mastigamoeba rugulosa Lepši, 1965

Mastigamoeba sapropelica Lepši, 1965

Mastigamoeba simplex Skuja, 1939

Mastigamoeba sordis Lepši, 1965

Mastigamoeba torulosa Skuja, 1956

Mastigella danieli Skvortzov & Noda, 1975

Mastigella polyvacuolata (Moroff, 1904) Goldschmidt, 1907

Mastigella radícula (Moroff, 1904) Goldschmidt, 1907

Mastigina limax (Moroff, 1904) Goldschmidt, 1907

Mastigina paramylon Frenzel, 1897

All but one of these names have priority over *Mastigamoeba balamuthi*, the name that the applicant wishes to conserve. One of these names, *M. ramulosa* Kent, 1880, has priority over *M. longifilum* Stokes, 1886. That is, with the proposed suppression of *Mastigamoeba longifilum* Stokes, 1886, *Mastigamoeba balamuthi* (Chávez, Balamuth & Gong, 1986) would not take priority, but rather priority would go to its oldest available synonym, *Mastigamoeba ramulosa* Kent, 1880, which is the valid name for this pelobiont with or without suppression of *M. longifilum*. An even older name, *Cercomonas lobata* Dujardin, 1841, had temporarily been placed in *Mastigamoeba* by Bütschli (1884) and although this was followed by several authors, e.g., Heider (1886, pp. 19–20), Plenge (1899, pp. 242–243), and Goldschmidt (1907, pp. 86–87), Klebs (1892, pp. 289, 299) concluded that this was erroneous and introduced the name *M. buetschlii* for Bütschli's concept.

Through the availability of *Mastigamoeba balamuthi* in culture the name has secured a relatively strong presence in the contemporary literature (e.g. Hinkel et al., 1994). Its oldest available synonym, *Mastigamoeba ramulosa*, is less frequently but currently still in use (e.g. Prowazek, 1903, p. 197; Cash & Hopkinson, 1905, p. 73; Goldschmidt, 1907, p. 158; Lemmermann, 1913, p. 558; 1914, pp. 33, 35; Valkanov, 1928, p. 420; Seckt, 1933, p. 285; Shen et al., 1990, pp. 331–332; Patrick, 1994, p. 378; Ma et al. 2008, p. 377).

Recommendation

Because of the absence of preservable material with many protists, there has been a tendency to use illustrated specimens as types. This has been suggested by the proponent of the current case (BZN 64: 214) who validly designated an illustrated specimen of *Mastigamoeba longifilum* Stokes as the lectotype. Such actions will leave considerable uncertainty as to the identity of the taxa. We do not believe designations of specimens from illustrations in historical papers achieve objectivity if alternative unambiguous information is available.

We are convinced that ultimately stability will be best achieved by allowing the principles of priority to stand. Given the absence of original or later designated type material, stability of use of the name *Mastigamoeba ramulosa* Kent, 1880 could be achieved through neotypification based on a hapantotype from the culture of the organism currently under the name of *Mastigamoeba balamuthi*, being the only nominal species among the synonyms for which cultures are available. In our case, the neotype would ideally derive from the protist culture 30984 at ATCC (American Type Culture Collections; Manassas, Virginia) that was deposited under the name *Phreatamoeba balamuthi*, or some part of it (such as some component of the DNA) as type material. That material would then act as an objective reference point for taxonomic purposes. The sequence of 16S (small subunit) ribosomal RNA from this culture was described by Hinkle et al. (1994) and is available at <http://www.ncbi.nlm.nih.gov/nuccore/463171>. As the only culture of the species available, it would fulfil the requirements of Article 75.3.6. that the neotype came as nearly as practicable from the original type locality despite the fact that the culture originated

in Gambia whereas *Mastigamoeba ramulosa* was described from Jersey, Channel Islands. No material closer to the original type locality is currently available. Many morphospecies of protists, this one included, do not seem to have a geographically restricted distribution.

The situation with this species is mirrored in tens of thousands of protist species, in which the species concepts are ambiguous because they rest on optical microscope descriptions and drawings but lack uninterpreted type material. Arguments that lead to the adoption of unambiguous type material are, in our view, more likely to achieve stability than suppression of selected dubious names or reversal of precedence.

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Comment on the proposed conservation of *Haliplanella* Hand, 1956 (Anthozoa, Actinaria) by suppression of *Haliplanella* Treadwell, 1943 (Polychaeta)
(Case 3493; see BZN 66: 312–316)

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The introduction by Hand (1956) of the genus *Haliplanella* and of the family HALIPLANELLIDAE was exclusively based on the assumed presence of a combination of three types of nematocysts in the acontia. However, two of these belong in reality to one variable type (Den Hartog & Ates, in press). Therefore we (re)assign *Sagartia luciae* Verrill, 1898 to the genus *Diadumene*.

Manuel (1981/1988, p. 134) united the family HALIPLANELLIDAE with the DIADUMENIDAE, but he, although admitting the amastigophore to be a category of p-mastigophore, maintained the genus *Haliplanella* based, apparently, on the fact that ‘a well-marked parapet and fosse [are] always present in any state of extension’ contrary to *Diadumene*. Stephenson (1935, p. 204) had already considered this to be a species level character, see also Stephenson’s (1935, p. 184) generic diagnosis. We doubt if ‘smoothing away of the parapet and the fosse’ can be a character of taxonomic use. As there are to our knowledge no convincing characters separating *D. luciae* more than specifically from its congener *D. cincta* (cf. Stephenson, 1935, p. 184), there is in our view no basis to maintain the genus *Haliplanella*. The recent proposal to conserve the name *Haliplanella* by Fautin et al. (BZN 66: 312–316) will serve no purpose.

In respect of *Tricnidactis errans* De Oliveira Pires (1988, p. 514) it is also claimed that three types of nematocysts are present in its acontia, but following Schmidt’s (e.g. 1972) nomenclature of the nematocysts, as De Oliveira Pires (1988) clearly

intends to, there are only two, i.e. spirulae and penicilli B (in two categories). Species descriptions should not be based on a single isolated character (see also e.g. Stephenson, 1928, p. 106), certainly not on a highly controversial one like the amastigophore. This is exemplified by the description of *T. errans*. We have not been able to study this species, but considering the anatomical details supplied by its author, we think *T. errans* belongs to another family. For a more extensive argumentation, see Den Hartog & Ates (2010).

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Comment on *Raja say* Le Sueur, 1817 (currently *Dasyatis say*; Chondrichthyes, Myliobatiformes, DASYATIDAE)
(Case 3410; see BZN **65**: 119–123; **67**: 66–67)

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The American Fisheries Society and American Society of Ichthyologists and Herpetologists joint Committee on Names of Fishes (CNF) is an august body for which we have the greatest respect. However, we have had occasion to disagree with them, in their various forms, in the past (Williams & Bunkley-Williams, 2003, 2005; Williams & Phelps, 1974). I am afraid that we must also disagree with their comment on the present Case (Lea et al., BZN **67**: 66–67).

The CNF presented information that is clearly correct, which we do not dispute. We do disagree with their interpretation of the ‘spirit of the Code.’ The purpose of the Commission and the Code is to prevent or resolve confusion. If the blind, strict adherence to the Code that they suggested always worked, then no Commission would be necessary.

With all due respect to the CNF, they apparently failed to see the problem in Case 3410. The temptation to change *say* into *sayi* is an irresistible error trap. This has

occurred hundreds of times in the past, is occurring right now, and if something is not changed, will continue to occur forever.

The CNF pointed out that they had changed the spelling from *D. sayi* to *D. say* in the 5th and 6th Editions of their official list of fish names for the last 18 years (actually 20 years, Nelson et al., 2004; Robins et al., 1991) and that *D. say* would again be used in the forthcoming 7th Edition (in preparation). This seems a bit contemptuous of the powers of the Commission to render a decision. Or perhaps suggesting the authority of the CNF supersedes that of the Commission? What the CNF did not mention is that their actions have not stopped all of the misuse of this name.

The CNF suggested that their name change solved this problem. However, any quick survey of the semi-popular (e.g. Galić & Nowell, 2010; Hill, 2001; SEAMAP, 2005, 2009), and even the scientific literature (e.g. Pury et al., 2001, Summers, 2000, Ortiz & Lalana, 2008, and other recent citations listed by Eschmeyer & Frickle, 2010) demonstrate that this is not the case. To understand how an ICZN ruling might solve this problem, we should examine some apparent sources of the problem and their possible solutions.

Obviously and foremost is the legacy of 150 years (1841–1991) of almost exclusive and ‘official’, e.g. 2nd–4th CNF checklists; Bailey et al., 1960, 1970; Robins et al., 1980, but not mentioned in first checklist (Chute et al., 1948) use of the misspelling *sayi*. This may constitute ‘prevailing usage’ (Article 33.2.3.1 of the Code) and end this discussion in favour of this spelling. Can 150 or more years of prevailing usage be cancelled out by the CNF in 18 or 20 years? We may have been wrong about adequate prevailing usage (Williams & Bunkley-Williams, BZN 67: 67). Otherwise, all these misspellings in the literature will continue to cause confusion for some time.

To discern other possible reasons for confusion, we polled ichthyologists [I] and fishery biologists [FB], including some experts in elasmobranch taxonomy, throughout the range of this fish species (eastern USA, Central and South America and the Caribbean) on their opinion of the correct spelling (without their checking references) and asked why they chose the spelling. An astonishing 47 (94%) [22 I, 25 FB] chose the *sayi* spelling. But the point was not a popularity contest, but the reasons for this confusion. Most, 24 [11 I, 13 FB] thought this was the proper formation of the word (which it is). More people will always have knowledge of the usually appropriate ending (*sayi*) than will have knowledge of this particular case (*say*), nor will all bother to check an appropriate recent authority. Only 5, [2 I, 3 FB] remembered this spelling from the literature (see paragraph above). Five [1 I, 4 FB] thought *sayi* sounded right, 4 [1 I, 3 FB] thought it looked right, and 1 [FB] thought it felt right. We interpret this to mean that *sayi* looks more ‘scientific’ or just looks better in general than *say*. One [I] thought *sayi* made more sense, 1 [I] found it more plausible, and 1 [I] chose it from instinct. Arbitrary choice of the spelling *sayi* fulfills some sort of physiological urge for completeness, correctness, or closure. Two [I] thought *say* was too simple, 1 [I] found it was too short, 1 [I] thought one-syllable names were rare, and 1 [FB] thought *say* was too common a word. No one suggested that *say* was a typographical error for *sayi*, but it will always appear that way to many. Of the 3 who chose the *say* spelling, 1 [I] guessed, and 2 [I, FB] remembered this spelling from the literature. Three respondents excluded themselves from the poll (1 FB was aware of the ‘*say/sayi*’ controversy and 2, very sadly serious, FBs refused to choose). Eleven [7 I & 4 FBs] did not respond.

Interestingly, many who responded were members of the two lofty organisations that support the CNF. If the fish specialists [Is & FBs] did not like the *say* spelling, what hope is there to convince everyone else? Obviously, confusion exists, will continue to exist, and can only be resolved by ruling in favour of the *sayi* spelling. People feel justified in violating irrational, unjust, or even incorrect rules and laws. A ruling in favour of *say* is always going to appear irrational and incorrect to many. Even if all scientists follow the ruling, which is unlikely, the general public will continue to be confused. We should at least attempt to transmit science to the public in a useful and clear form devoid of taxonomic traps.

The CNF also stated examples of what would be considered similarly incorrectly formed names (Article 31.1.2; Recommendation 31A), but these are irrelevant to the present case because none of them has generated as much widespread misuse and confusion as *D. say*. Nor is such precedence considered by the current Code (Principle (8) of the 'Introduction': 'never by reference to precedent').

The simplest way to prevent *D. say* being misspelled as *D. sayi* is to change the correct name to *D. sayi*. This would eliminate all confusion, all misspellings, and offend no one save possibly a few purists. If the name *D. say* is retained, confusion will continue.

We close with the concept of the spirit of the Code brought up by the CNF. I hope we are correct in our assumption that the Commission exists to eliminate confusion.

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Comments on the proposed conservation of usage of *Testudo gigantea* Schweigger, 1812 (currently *Geochelone (Aldabrachelys) gigantea*) (Reptilia, Testudines)
(Case 3463; see BNZ **66**: 34–50, 80–87, 169–186, 274–290, 352–357; **67**: 71–90)

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I am writing in support of Case 3463 to stabilise the name of the Aldabra tortoise. My field of study is conservation genetics, particularly of turtles, so the issues with the nomenclature of the Aldabra tortoise are something I have been aware of. I have read the various arguments put forth on this case and would like to join with those who support the case. We have similar problems with the naming of many species in Australia and so are very aware of the problems caused by having an ever changing background of names to deal with. I hope that you will listen to the strong views in support of this case from the many people who have worked very closely with the species.

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A chance to painlessly resolve the problem of the scientific name of the giant land tortoise inhabiting the island of Aldabra and the Granitic Seychelles was frittered

away in the 1980s, when conflicting opinions about it were published in several papers dealing with the geography, taxonomy, phylogeny and nomenclature of giant tortoises of the western Indian Ocean (Bour, 1982; 1984a; 1984b; 1985; 1988; Crumly, 1986; Pritchard, 1986). Three of these papers (Bour, 1984a; Crumly, 1986; Pritchard, 1986) and partially also Bour's (1982) paper, addressed the identity of *Testudo gigantea* Schweigger, 1812, a nominal species whose name has been well established for the tortoise native to Aldabra island since 1881 (Frazier, 2006; BZN 66: 34–50). Although all three authors of these papers are considered to be experts in testudinid taxonomy, their study, analysis and interpretation of Schweigger's original texts describing his new species named *Testudo gigantea* led to three fairly different conclusions concerning the species' identity. As a consequence of their findings, both Bour (1982; 1984a) and Pritchard (1986) declared that the name *Testudo gigantea* Schweigger, 1812 should not be assigned to the Aldabra tortoise and that the name *Testudo elephantina* Duméril & Bibron, 1835 had to be applied to this species. This action, together with the erecting of the new genus name *Dipsochelys* by Bour (1982) and the revival of the forgotten species name *Testudo dussumieri* Gray, 1831 by Gerlach & Canning (1996), was the starting point of a continuing hustle of nomenclatural changes at both genus and species level, ending up in a flood of various, sometimes grotesque and absurd binominal combinations (see Fritz & Havaš, 2007). Hence, Frazier's designation of a neotype for *Testudo gigantea* Schweigger, 1812 in 2006 was a logical step towards normalisation of this situation.

Taking into account its object to support stability of names, the Code provides effective rules and tools to allow the conservation of long established names in their current usage, including in cases where the present taxonomic concept is different from the original concept when the name was established. We give just two examples to illustrate the effectiveness of these tools. Firstly, Wallin (1977) demonstrated that the type specimen used by Linnaeus for his description of *Testudo geometrica* was in reality an individual of *Geochelone elegans* (Schoepff, 1795). In order to conserve the long used scientific name for the Geometric Tortoise in its current sense and to prevent subsequent nomenclatural confusion, Hoogmoed & Crumly (1984), using Article 73 (c) (i) of the Code (1964), designated a lectotype for this nominal species. Secondly, Bour & Maran (1999) suggested that the young specimen used by Linnaeus to define his concept of *Testudo orbicularis* Linnaeus, 1758, was an individual of *Mauremys leprosa* (Schoepff, 1812). Nevertheless, they accepted a verdict that 'Toutefois, nous n'allons pas modifier une situation nomenclaturale stabilisée depuis plus de 120 ans . . .'. ['However we are not going to modify a nomenclatural situation stabilised for over 120 years . . .']. However, they overlooked the fact that this matter had been explained in detail several years previously (Fritz, 1992) and had been definitively resolved two years later by designation of a neotype for *Testudo orbicularis* Linnaeus, 1758 using Article 75 of the Code (1985) (Fritz, 1994). Despite the fact that the identity of *Testudo orbicularis* Linnaeus, 1758 has been quite clear since 1994, Bour (2009) revived this case again. He concluded from the original description by Linnaeus (1758) that *Testudo orbicularis* was based on a specimen of *Mauremys leprosa*. Bour evidently ignored the existence of a name-bearing type (by neotype designation) for *Testudo orbicularis* Linnaeus, 1758, but he expressed very clearly the attitude 'I do not wish to run counter to the stability of nomenclature'. So,

despite his confidence that both original type specimen and description used by Linnaeus did not fit the present taxonomic concept of *Emys orbicularis*, Bour advocated stability of nomenclature.

Were all nomenclatural changes inevitable?

The above-mentioned two examples show the efforts of all authors involved to conserve a long used scientific name, fully in harmony with the text of the Code. Is *Testudo gigantea* Schweigger, 1812 a similar case? At that time when three different opinions about the identity of *Testudo gigantea* appeared, three certainties became clear: (1) The interpretation of Schweigger's description was ambiguous; (2) the type specimen of *Testudo gigantea* was lost or unidentifiable; and (3) *Testudo gigantea* Schweigger, 1812 was the well-established scientific name for the Aldabra tortoise (Bour, 1984a; Crumly, 1986; Pritchard, 1986). Even if one considered that Bour and Pritchard are right and that Schweigger's description does not match the Aldabra tortoise, one cannot agree with their opinion that Schweigger's name should not be applied to this species. Taking into account the above-mentioned three certainties, the spirit of the Code (stability) and the rules provided to sort out such matters, the application of Article 75 of the Code (1964, 1985) and the designation of a neotype would have been the most appropriate actions for protection of the scientific name of such a popular and fascinating creature as the Aldabra tortoise. However, this did not happen and the species name *Testudo elephantina* Duméril & Bibron, 1835 was revived and a new genus name *Dipsochelys* Bour, 1982 was proposed for this species.

Treated as generically distinct since 1978, three genus names for the Aldabra tortoise and its relatives have been applied: *Megalochelys* Fitzinger, 1843 (Obst, 1978), *Aldabrachelys* Loveridge & Williams, 1957 (Bour, 1979) and *Dipsochelys* Bour, 1982 (Bour, 1982). Whereas rejection of the Fitzinger's name *Megalochelys* has been nomenclaturally fully justified (*Megalochelys* Fitzinger, 1843 is junior homonym of *Megalochelys* Falconer & Cautley, 1837), rejection of the name *Aldabrachelys* is another nomenclatural matter. Bour (1982) was right that if *Testudo gigantea* Schweigger, 1812 was the type species of *Aldabrachelys* Loveridge & Williams, 1957 and if *Testudo gigantea* Schweigger, 1812 was *Cylindraspis indica* (Schneider, 1793), then *Aldabrachelys*, independently of its different taxonomic concept, becomes a subjective junior synonym of *Cylindraspis* Fitzinger, 1835. Likewise, Bour (2006) was right that if the holotype of *Testudo gigantea* Schweigger, 1812 was *Chelonoidis denticulata* (Linnaeus, 1766), *Aldabrachelys* becomes a subjective junior synonym of *Chelonoidis* Fitzinger, 1835. No matter how bizarre it sounds, fortunately that is true. Bour's claims were based on the principle of typification that means that every nominal taxon is inseparably linked with its name-bearing type whatever it is. However, to retain the intention of the authors of the name *Aldabrachelys* and its taxonomic delineation, and to support nomenclatural stability, the use of Article 70(a) of the Code (1964) would have been preferable to generation of the new genus name *Dipsochelys* Bour, 1982. It must be noted as well that designation of a neotype and the fixation of the name *Testudo gigantea* Schweigger, 1812 for the Aldabra tortoise as mentioned above would have resolved this matter without need to refer the case to the Commission.

Possible future threats for the stability of nomenclature

The elimination of Frazier's neotype designation for the nominal species *Testudo gigantea* Schweigger, 1812 and its replacement name *Testudo macropus* Schweigger, 1820 might stimulate a series of activities challenging other long established names in their current usage. In addition, this would further threaten the stability of the name of the Aldabra tortoise. As is evident, some professionals do not recognise the claims recently published by Bour (2006) that the holotype of Schweigger's *Testudo gigantea* still exists and that it is a specimen of the South American yellow-footed tortoise *Chelonoidis denticulata* (Linnaeus, 1766). Even if Bour is right, Article 75.6 of the Code (1999) provides a rule enabling the conservation of prevailing usage by a neotype.

With no obligation to refer the case to the Commission, there is also a real possibility to follow up Loveridge and Williams' (1957) intention and to retain the taxonomic concept of their *Aldabrachelys* which was determined by definition ('External naris higher than wide . . .'), range ('Aldabra and Madagascar') and contents ('*gigantea*, *sumeiri* [sic] and †*grandidieri*') and it is clearly in contradiction with the taxonomic concepts of both *Cylindraspis* Fitzinger, 1835 and *Chelonoidis* Fitzinger, 1835 (Loveridge & Williams, 1957). Application of Article 70.3.2 of the Code (1999) enables the fixation of a new type species and the subsequently decisive settling of the name *Aldabrachelys* Loveridge & Williams, 1957 for the Aldabra tortoise and its related species. Moreover, it gives back to Article 13.1.1 of the Code (1999) its true meaning and seriousness ('every new name published after 1930 must be accompanied by a description or definition that states in words characters that are purported to differentiate the taxon'). Without fixation of the species name *gigantea* for the Aldabra tortoise, *Aldabrachelys dussumieri* would become the valid combination for the Aldabra tortoise, a combination, that is practically unknown and the least common in the literature about the Aldabra tortoise. Frazier's proposal to accept the designation of a neotype for *Testudo gigantea* Schweigger, 1812 will solve this matter well.

If Frazier's proposal is accepted, however, we see no reason to suppress the species name *dussumieri* Gray, 1831 as Frazier asks (BZN 66: 43). Suppression of the subjective junior synonym is unnecessary because according to the Principle of Priority of the Code (1999) it cannot jeopardise the nomenclatural stability of a well-established valid name that is its subjective senior synonym and that will be fixed by the Commission. Concern that without its suppression, use of the species name *dussumieri* (and *elephantina* as well) for the Aldabra tortoise will continue, is useless, because there is a certainty that it will be, irrespective of the Opinion of the Commission. Moreover, taxonomy and phylogeny of the giant tortoises of the western Indian Ocean is still undergoing research and argument and there are several opinions about the number and classification of the valid taxa and their relationships. The name *Testudo dussumieri* Gray, 1831 has its name-bearing type definitely fixed by lectotype designation (Bour, 2006) and though the provenance and identity of the lectotype show its affiliation with the Aldabra tortoise nowadays (Austin et al., 2003; Bour, 2006), development of new scientific methods in taxonomy and their application, together with the study of old and overlooked documents, might change its present taxonomic concept. Also for this reason, demand for suppression of the name

Testudo dussumieri Gray, 1831 seems to be premature and inconvenient and its status as a subjective junior synonym of *Testudo gigantea* Schweigger, 1812 should be retained.

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As part of the management authority for the wildlife and protected areas of the Galápagos Archipelago, Republic of Ecuador, we would like to clarify some misconceptions recently published in the Bulletin regarding the giant tortoises that are endemic to our islands. Although we understand that the Commission makes its decisions on a case-by-case basis, comments of several people who oppose the conservation of the name *gigantea* for the Aldabra tortoise have included allegations about the situation regarding Galápagos tortoises that need to be corrected. It may seem perfectly clear for some taxonomists to follow repeated changes to the scientific name of a single, charismatic species (Hoogmoed, BZN **66**: 355), but the reality in the field is quite different. Every time a scientific name changes it involves the management authority and other collaborating organisations in a process of

actualisation of laws, regulations, norms, documents, customs instructions, educational materials, pamphlets and other literature, signage, and so forth. These changes require significant time and effort from trained personnel. We fully understand that taxonomic knowledge and perceptions change over time (this is research that the Galápagos National Park is now actively involved with) and management authorities must assimilate this new information and make appropriate adjustments. However, when names are changed because of technicalities in a complex nomenclatural code, with no increase in our understanding of the animals involved, it is a different matter because it creates uncertainty about these animals, and it also risks creating frustration at the administrative and political levels that can lose interest in the appropriation of resources needed for conservation and management. For example, although Pritchard (1996) concluded that *elephantopus*, the accustomed name of the Galapagos tortoises, should be changed to *nigra* (with about a dozen subspecies), we have never used *nigra* for any of our education or conservation activities: we have too many other pressing priorities involved in the conservation of the tortoises and their ecosystems. The claims made by a few taxonomists that name changes for the Galápagos tortoise caused no problems for the management authority and were accepted without any concerns (Cheke, BZN 67: 80; Dubois et al., BZN 67: 83) are not true. The fact that these people did not know of evidence for such problems does not prove that the problems did not exist. In the case of the Aldabra tortoise there is obviously no consensus among taxonomists on which specific name to use, even though the majority are in favour of conserving *gigantea*. This situation only increases the administrative and conservation problems.

For these reasons we sympathise with the opinions of the management authority of the Republic of Seychelles, the other sovereign state that has endemic giant tortoises. The comments of the Minister of Environment (BZN 66: 287) and the Seychelles Islands Foundation and its staff and collaborators (BZN 66: 80, 180–181, 352–354), other wildlife authorities in the region like the Mauritian Wildlife Foundation (BZN 66: 181), as well as the Chairman and members of the CITES Animals Committee (BZN 66: 283, 356) are consistent with the problems that we face in Galápagos.

We beseech taxonomists to recognise other priorities that are critical to those involved in protecting the animals and their habitats while they are still alive. Stable names, universally understood and accepted, are a basic need.

(4) Belinda Wright

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The Wildlife Protection Society of India has been actively involved in an enormous variety of wildlife conservation issues for more than 16 years. As we operate in a region of exceptional biological diversity, we are continually dependent on the work of taxonomists and systematists, because the species that are ultimately deemed to require protection and special attention are defined by them. Needless to say, we greatly respect professionals from these disciplines, and would not think of interfering with their work. At the same time, we believe that the conservation of the planet's

biological diversity has been widely accepted as a global priority, and this enormous challenge can only be met with full collaboration between different nationals and different professionals.

Having recently lost 'Aditya', an Aldabra tortoise at the Alipore Zoo, Kolkata, that was thought to be 255 years old, we are especially interested in this remarkable species. In this light it is highly disappointing to find a raging, ever-more passionate, debate in which half a dozen taxonomists are pitted against other professionals, including not only taxonomists and systematists, but also conservationists, educators, and administrators. A discussion in a scientific journal has now been tainted with acrimony, impassioned personal comments, and discrediting of people who represent another point of view. It hardly seems appropriate or defensible for taxonomists to disqualify and discredit professionals from other disciplines by making so many cavalier comments. There are several perfectly clear and rational statements by professionals who specialise in the conservation of wildlife, explaining why constantly changing scientific names present profound risks to the conservation of endangered species. These have been submitted by, among others, the Chair and members of the CITES Animals Committee (Althaus BZN 66: 256–257; Grimm BZN 66: 283) and professional educators and conservationists from internationally respected organisations (Beaver BZN 66: 80; Honegger BZN 66: 276; Mortimer BZN 66: 285; Rhodin BZN 66: 87–88; Schmidt BZN 66: 288–289), not to mention the Minister of Environment of the Seychelles (Morgan BZN 66: 287) and the agency responsible for the conservation and management of the tortoise in question (Fleischer-Dogley et al. BZN 66: 180–181). The list even includes respected systematists who have made major scientific contributions on the tortoise whose name is so hotly debated (Arnold BZN 66: 177). Yet, a few taxonomists (Hoogmoed BZN 66: 254–256; Cheke BZN 67: 79–81; Dubois et al. BZN 67: 82–89) would have us believe that all these people do not know what they are talking about. They say that it is perfectly fine for scientific names to be in a constant state of debate, that this chaos and uncertainty has no relevance to the many complex challenges that are involved in the conservation of endangered wildlife, particularly highly attractive species like the Aldabra tortoise that is continually trafficked internationally on black markets. We at the Wildlife Protection Society of India know very well after decades of unending problems and challenges, particularly those involving illegal trade in wildlife, that the above-mentioned statements of professional conservationists, educators, and administrators are absolutely true and credible. We can only hope that taxonomists will learn to respect other professionals and understand the wisdom of collaborating with them or the consequences will be dire. Disparaging conclusions 'that issues beyond mere science and nomenclature are at issue here' (Cheke, BZN 67: 81) can only further degrade the discussion. Certainly, the designers of the ICZN website were perfectly aware of the fundamental need for 'stable and universal nomenclature' when they wrote: 'International conventions and national or regional legislation concerning threatened or endangered animals specify the species or subspecies name of the animals that the law intends to protect. Thereafter, protection goes with the name rather than the endangered species itself. Any subsequent change in name could therefore affect conservation measures. The Commission often acts to protect the names of endangered species.' (<http://www.iczn.org/Conservation.htm>). Hence, the need to stabilise the name '*gigantea*' for the Aldabra tortoise is not about

‘personal preference or personal comfort’ as was claimed so derogatorily (Iverson BZN 66: 284; Dubois et al. BZN 67: 88), but rather about a name that requires recognition by different institutions for their proper function.

(5) Sharon Okanga

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I wish to state my support for case 3463. As a biologist who is naive to the specifics of scientific nomenclature, I used the name *Dipsochelys dussumieri* to describe the Aldabran giant tortoise, in two publications: Okanga & Rebelo (2006) and Wazala & Okanga (2006).

However, having now read the presentation in case 3463, I have been convinced by the sound arguments and have been made aware of my error in judgment. I wish to conserve the name *Testudo gigantea*, and I request that these publications not be used in any case supporting its replacement by *Dipsochelys dussumieri*.

Additional references

- Okanga, S. & Rebelo, C.** 2006. Tick prevalence and species diversity on Aldabran giant tortoises (*Dipsochelys dussumieri*) in relation to host range and host size in a restored ecosystem, Kenya. *African Journal of Ecology*, **44**(3): 395–400.
- Wanzala, W. & Okanga, S.** 2006. Ticks (Acari: Ixodidae) associated with wildlife and vegetation of Haller Park along the Kenyan coastline. *Journal of Medical Entomology*, **43**(5): 789–794.

(6) Ferry Grunewald

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With awe I have read the whole of Case 3463. I am quite shocked to see how this case has developed into a schoolyard brawl. Especially the interference of people who don't normally work with the Aldabran Giant tortoise is quite disturbing. Also the fact that scientists let themselves be driven by personal emotion without a scientific reason upsets me. Yet, because this has happened I feel obliged to give my point of view as well. I consider myself just a hobbyist/layperson. Yet I have read the Code. I have also read the works of both Bour and Frazier. Using the Code, one can come to only one conclusion and that is that Bour's argument is the correct one. I am aware that outside Europe many people continue to use the name *Aldabrachelys* or *Geochelone gigantea*. I believe this is due to a lack of information about the articles of Bour. Yet, on the European continent, the name *Dipsochelys dussumieri* is probably the most used name for the Aldabran Giant Tortoise. The editors of TRIONYX for example have been using this name since 2003 instead of *gigantea*. The articles of Bour are favourites among European turtle keepers and interesting as they show that Bour does his research very thoroughly, diving into the past of many species of turtles, unearthing their true history.

Objections of conservationists worldwide that changing the name to *Dipsochelys dussumieri* would interfere with their work and conservation of this tortoise are in my opinion unfounded. Names can be changed in documents virtually overnight. More importantly, the world's leading conservationist in the field of the Aldabran Giant tortoise, Justin Gerlach, has been using the name *Dipsochelys dussumieri* for a decade now. His 2004 book has become somewhat of an icon as well.

I personally saw and measured the type of *Dipsochelys dussumieri*, RMNH 3231, in the Leiden Museum. There is no doubt about its identity. It looks like a perfect juvenile of the Aldabran Giant tortoise. I too believe that its name, based on the rules of the Code, should be *Dipsochelys dussumieri*. I recommend that the Commission rejects Frazier's proposal. This case has already gone way too far.

(7) Scot Ramsay

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In a paper I published some years ago (Ramsay et al., 2002) I referred to the species as *Dipsochelys dussumieri*. I would like to clarify that my publication was not meant as validation or particular support for *dussumieri* over *gigantea*. Further, having looked at the case information, I agree with Case 3463, and offer my support for conservation of the name *Testudo gigantea*.

Additional reference

Ramsay, S.L., Hofmeyr, M.D. & Joshua, Q.I. 2002. Activity patterns of the Angulate Tortoise (*Chersina angulata*) on Dassen Island, South Africa. *Journal of Herpetology*, 36(2):161–169.

Comment on the proposed conservation of usage of *Allosaurus* Marsh, 1877 (Dinosauria, Theropoda) by designation of a neotype for its type species *Allosaurus fragilis* Marsh, 1877
(Case 3506; see BNZ 67: 53–56)

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As the state paleontologist of Utah, I heartily support the proposal to make USNM 4734 the neotype of *Allosaurus*. *Allosaurus* has been the Official State Fossil of Utah for many years based primarily on the 54+ specimens of *Allosaurus fragilis* from our Cleveland/Lloyd Quarry (a national historic landmark) with many skeletons exhibited across the globe. No large theropod dinosaur is as well documented as *Allosaurus* and to risk losing this name would only serve to confuse and complicate our science among the people of the world. The logic presented in Case 3506 is simple and straightforward and will provide for greater stability in systematics.

Comments on the proposed conservation of usage of *Archaeopteryx lithographica* von Meyer, 1861 (Aves) by designation of a neotype

(Case 3390; see BZN 64: 182–184, 261–262; 65: 314–317; 66: 87–88, 357–358; 67: 90–93)

Gareth Dyke

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I disagree with Padian's comment (BZN 66: 357–358) regarding the proposed neotype designation for *Archaeopteryx lithographica* von Meyer, 1861. It is appropriate to designate the London specimen (BMNH 37001, the Natural History Museum) as the neotype of this taxon. Contrary to Padian's suggestion, the Commission has a chance here to make a nomenclatural situation clearer, resolving a long-standing issue that surrounds one of the most famous fossils. A neotype will allow meaningful comparisons to be made with a specimen that we know is *Archaeopteryx lithographica*: to tread water, as Padian recommends, would be to waste an opportunity. Vertebrate palaeontologists have for years effectively treated the London specimen as the type of *Archaeopteryx lithographica* von Meyer, 1861, and it will almost certainly never be possible to confidently determine whether the isolated feather (the current holotype) really belongs to the same animal as the skeletal specimens of *Archaeopteryx*. In my view, Padian's argument regarding the current absence of any other feathered theropods in Solnhofen does not hold up; the absence of evidence is not evidence for anything.

Comments on the proposed conservation of *Anthochaera* Vigors & Horsfield, 1827 and *Philesturnus* Geoffroy Saint-Hilaire, 1832 (Aves) by suppression of the generic name *Creadion* Vieillot, 1816

(Case 3499; see BNZ 66: 332–339; 67: 93–94)

(1) Walter J. Bock

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Gregory & David's comments (BZN 67: 93–94) on a potential type species designation of *Sturnus carunculatus* Gmelin for *Creadion* Vieillot by Vigors & Horsfield (1827) have led us to review the issue. Gregory & David raise two

questions. First, is the 'designation' sufficiently explicit to satisfy Article 67.5? And secondly, how is it affected by Article 69.4, the 'fixation by elimination' rule? Gregory & David concluded that the designation was sufficient, based on Vigors & Horsfield's statement 'leaving the *Sturnus carunculatus* . . . to represent that group', where group = *Creadion*. They contended that the word 'represent' in this context was an equivalent term for a type or type species (Article 69.1.1). In Case 3499, we (BZN 66: 332–339) had nevertheless interpreted both clause and 'represent' to mean that *Sturnus carunculatus* Gmelin was cited merely as an example or representative of *Creadion*, and so not an explicit designation under Article 67.5 (cf. 67.5.1).

As Gregory & David rightly point out, the context in which the term 'represent' was used by Vigors & Horsfield is crucial to its meaning. Accordingly, we reproduce here the *complete* contextual tract from Vigors & Horsfield's discussion of the Australian honeyeater, *Creadion*, so that Commissioners can judge the issue for themselves: 'M. Vieillot has referred this bird to a new genus of his, which he names *Creadion*, and which he divides into two sections; one represented by the *Sturnus carunculatus*, Gmel., the other by the bird before us. He places this genus in the vicinity of the *Sturnidae*; uniting it with one or two other forms, which are chiefly distinguished by fleshy processes from their heads, into a family under the name of *Carunculati*. As we consider our present group to have no relation to the *Sturnidae* beyond the unimportant analogical one of having in common with two or three species carunculated appendages to the head, we have no hesitation in removing it from the genus *Creadion*; leaving the *Sturnus carunculatus* (with which species however we must confess that we are unacquainted) to represent that group.'

Here we make two points. First, Vieillot (1817) did not name his sections of *Creadion*. Secondly, Vigors & Horsfield use the word 'represent' a second time in their discussion, in the first sentence, and apply it there it to the same species in the same way as in their last sentence – also, we would contend, as an example.

Concerning the 'fixation by elimination' rule, we happily agree with Gregory & David's implication that it cannot apply to type species already properly designated. Rather, we see it as complementing Article 67.5 by limiting further the circumstances under which 'loose' or improper designations can be attributed, in the interests of ensuring that designations are rigidly explicit. Given that Vigors & Horsfield's referral of *Sturnus carunculatus* Gmelin to *Creadion* is such a case, we find it appropriate to invoke the rule (Article 69.40) which also disqualifies Vigors & Horsfield's action as a type designation. We add that this interpretation was originally communicated to us by Dr W.D.L. Ride, former Commissioner; he chaired the editorial committee for the third and fourth editions of the Code, the editions in which the 'fixation by elimination' rule first appeared. We have followed his lead in the belief that if anyone would understand the intentions of that rule and the circumstances in which it should be applied, it should be him. We also take this opportunity to correct misleading wording in our original application, Case 3499 (BZN 66: 333): in paragraph no. 3, line 12, replace 'is qualified' by 'qualifies'.

At the root of this dispute is the meaning of 'an equivalent term' for a type species in Article 69.1.1. We would interpret it strictly, to such terms as 'the specific name bearer for this genus'; others obviously read it more loosely, bringing it into conflict with the provisions of Article 67.5. In giving the opinions justifiably sought on this case by Gregory & David, could we suggest that the Commission might also consider

defining its interpretation of ‘an equivalent term’, and incorporate that interpretation, preferably with examples, in the next edition of the Code.

(2) Ernst Bauernfeind

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I would like to support the application by Bock et al. (BZN 66: 332–339) to conserve the generic names *Anthochaera* Vigors & Horsfield, 1827 and *Philesturnus* Geoffroy Saint-Hilaire, 1832. The complex history of the case and the rationale behind the application have been convincingly explained by Bock et al. (BZN 66: 332–339). However, their remark (p. 334) that *Creadion* Vieillot was employed for Australian wattlebirds only by Mathews (until 1946) is not literally true. Stresemann (1953, p. 84), in his paper on birds collected by Labillardière, deliberately used the combination *Creadion paradoxus* (Daudin, 1800) as a valid name, quoting Mathews (1922, p. 170) and referring to the type specimen in the Muséum d’Histoire Naturelle in Paris. This additional evidence may serve as an example to stress the necessity of conserving the generic name *Anthochaera* Vigors & Horsfield, 1827 for Australian wattlebirds (MELIPHAGIDAE).

Suppression of the generic name *Creadion* Vieillot, 1816 under Article 23.9.3. of the Code seems necessary because neither the strict application of the Principle of Priority for the generic name *Creadion* Vieillot, 1816 nor acceptance of the interpretation by Amadon (1962, p. 158) would be likely to maintain stability in zoological nomenclature. The first would threaten prevailing usage of the generic name *Anthochaera* Vigors & Horsfield, 1827; the second would be inconsistent with the regulation in Article 69.1.1. of the Code. I therefore fully support the application.

Additional references

Stresemann, E. 1953. Vögel, gesammelt von Labillardière während der “Voyage à la recherche de Lapérouse” (1791–1794). *Mitteilungen aus dem Zoologischen Museum in Berlin*, 29(1): 75–106.

Comment on the proposed conservation of usage of *Mastodon waringi* Holland, 1920 (currently *Haplomastodon waringi*; Mammalia, Proboscidea) by designation of a neotype

(Case 3480; see BZN 66: 164–167, 358–359; 67: 96)

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Ferretti (BZN 66: 358–359) agrees with Lucas (Case 3480, BZN 66: 164–167) that: (1) *Mastodon waringi* Holland, 1920 has been long and widely used as the valid, type species of *Haplomastodon*, although *Mastodon chimborazi* Proaño, 1922 is the type species of *Haplomastodon* by original designation; (2) *M. waringi* is based on an

undiagnostic holotype, so it is a nomen dubium; and (3) the diagnostic parts of the holotype of *M. chimborazi* (the skull and lower jaw) were destroyed in a fire in 1929. Ficarelli et al. (1995) also recognised these facts, so they proposed a diagnostic neotype for *M. chimborazi* and advocated recognising it as the oldest valid name for a species of *Haplomastodon*.

In a petition to the Commission, Lucas (Case 3480) sought to preserve long and nearly universal usage by proposing a diagnostic neotype for *Mastodon waringi* so that it could continue to be used as the oldest valid name of a species of *Haplomastodon*. Note that only the handful of references cited by Ferretti (BZN 66: 358–359) use *H. chimborazi* instead of *H. waringi*. Ferretti proposes to continue to recognise *H. chimborazi* based on the parts of the holotype skeleton (two humeri and possibly the atlas vertebra) that are still extant. Nevertheless, these are not diagnostic elements of a species of *Haplomastodon* or of the genus; for example, see Hoffstetter (1950, 1952), who makes it clear that the diagnosis of *H. chimborazi* is based on cranial and dental features, not on features of the postcrania. Furthermore, although Hoffstetter (1952) believed that the presence of a closed transverse foramen in the atlas vertebra is diagnostic of *Haplomastodon*, Simpson & Paula Couto (1957, p. 167) concluded that this feature was ‘an individual variation’ and thus of no taxonomic significance. Therefore, Ferretti’s suggestion is not only to continue to use *H. chimborazi* without a diagnostic holotype (or neotype) but also to overturn wide and nearly universal usage of *H. waringi*. Instead, I prefer to promote the stability and universality of nomenclature by establishing a diagnostic neotype in order to preserve usage of *H. waringi* as the oldest valid name of a species of *Haplomastodon*.

OPINION 2247 (Case 3456)***Nerita helicina* Brocchi, 1814 (currently *Euspira helicina*; Mollusca, Gastropoda, NATICIDAE): specific name conserved by the designation of a neotype**

Abstract. The Commission has conserved the current usage of the name *Euspira helicina* (Brocchi, 1814) for a species of naticine gastropod from the Pliocene of Piacenza area, Italy by setting aside previous type fixations and designating a neotype.

Keywords. Nomenclature; taxonomy; NATICIDAE; *Euspira helicina*; *Tectonatica prietoi*; naticine gastropod; Pliocene; Piacenza area, Italy.

Ruling

- (1) Under the plenary power it is hereby ruled that all previous type fixations for the name *Nerita helicina* Brocchi, 1814 are set aside and the specimen i 4680 in Museo Civico di Storia Naturale di Milano (MSNM) is hereby designated as the neotype.
- (2) The name *helicina* Brocchi, 1814, as published in the binomen *Nerita helicina* and as defined by the neotype designated in (1) above, is hereby placed on the Official List of Specific Names in Zoology.

History of Case 3456

An application to conserve the current usage of the name *Euspira helicina* (Brocchi, 1814) for a species of naticine gastropod from the Pliocene of Piacenza area, Italy, was received from Luca Pedriali (*San Martino, Ferrara, Italy*) and Elio Robba (*Dipartimento di Scienze Geologiche e Geotecnologie, Università degli Studi di Milano Bicocca, Milan, Italy*) on 14 March 2008. After correspondence the case was published in BZN **65**: 173–177 (September 2008). The title, abstract and keywords of the case were published on the Commission's website. No comments were received on this case.

Decision of the Commission

On 1 September 2009 the members of the Commission were invited to vote on the proposals published in BZN **65**: 175. At the close of the voting period on 1 December 2009 the votes were as follows:

Affirmative votes – 23: Alonso-Zarazaga, Ballerio, Bogutskaya, Bouchet, Brothers, Grygier, Halliday, Harvey, Krell, Kullander, Lamas, Lim, Minelli, Pape, Papp, Patterson, Rosenberg, Štys, van Tol, Winston, Yanega, Zhang and Zhou.

Negative votes – 4: Fautin, Kojima, Kottelat and Ng.

Pyle was on leave of absence.

Voting AGAINST, Fautin said that the glossary stipulates that a neotype is to be designated when 'no name-bearing type is believed to be extant,' but that is not the

situation described by the authors. The case seems to be that the lectotype selected from among syntypes of more than one species was a specimen of the ‘wrong’ species. She felt that the most straightforward solution would be to request that the lectotype designation be set aside, and once it is, the authors could select a specimen of the other species from among the syntypes to be the lectotype. Kojima, voting AGAINST, said the proposal should have requested suppression of the inadvertent lectotype designation by Rossi Ronchetti (1955), followed by publication of the new lectotype designation in the case or elsewhere (which would not need to be authorised by the Commission). Also voting AGAINST, Kottelat said that the application was missing a demonstration that Rossi Ronchetti (1955) effectively designated a lectotype by inference of a holotype. Inference of a holotype implies that s/he believed that the species was based on a single specimen. Kottelat said that he could not examine Rossi Ronchetti’s text, but if he understood the application correctly, the box with four specimens was examined by Rossi Ronchetti. If so, two possibilities exist. First, Rossi Ronchetti considered that the specimens were all part of the type series and then his/her mention of a holotype is not a lectotype designation, and a lectotype can still be designated from among the syntypes. Alternatively, Rossi Ronchetti explained the reason s/he considered only one specimen to be part of the type series and this information is missing in the case. Ng, explained his vote AGAINST, saying that although the arguments were valid, the taxonomic history of the species was not treated as well as it should have been. He wanted to know, would a switch of names cause that many problems – even if one species is less common than the other? Since the identity of the lectotype designated is now clearly known, then what possible future confusion is there? Does it mean that what is now known under the name *helicina* needs a new replacement name or is there another well known name as well? These questions compelled him to vote against the case in its current form.

Original reference

The following is the original reference to the name placed on an Official List by the ruling given in the present Opinion:

helicina, Nerita, Brocchi, 1814, *Conchiologia fossile subapennina*, vol. 2, Stamperia Reale, Milano, p. 297.

OPINION 2248 (Case 3470)***Halectinosoma* Vervoort, 1962 (Crustacea, Copepoda, Harpacticoida):
usage conserved**

Abstract. The Commission has conserved the usage of the name *Halectinosoma* Vervoort, 1962 for a common genus of primarily marine harpacticoid copepods in the family ECTINOSOMATIDAE. The name *Halectinosoma* was threatened by the senior subjective synonym *Pararenosetella* Lang, 1944 (type species *Ectinosoma erythrops* Brady, 1880). All previous type fixations for *Halectinosoma* Vervoort, 1962 were set aside and *Ectinosoma chrystalii* Scott, 1894 has been designated as the type species. *Halectinosoma* Vervoort, 1962 has also been given precedence over *Pararenosetella* Lang, 1944 whenever the two names are considered to be synonyms.

Keywords. Nomenclature; taxonomy; Copepoda; Harpacticoida; ECTINOSOMATIDAE; *Halectinosoma*; *Pararenosetella*; *Pararenosetella erythrops*; *Halectinosoma chrystalii*; harpacticoid copepods; cosmopolitan.

Ruling

- (1) Under the plenary power:
 - (a) all previous fixations of type species for the nominal genus *Halectinosoma* Vervoort, 1962 are hereby set aside and *Ectinosoma chrystalii* Scott, 1894 is hereby designated as the type species;
 - (b) the generic name *Halectinosoma* Vervoort, 1962 is hereby given precedence over the name *Pararenosetella* Lang, 1944, whenever the two are considered to be synonyms.
- (2) The following names are hereby placed on the Official List of Generic Names in Zoology:
 - (a) *Halectinosoma* Vervoort, 1962 (gender: neuter), type species by subsequent designation *Ectinosoma chrystalii* Scott, 1894 as ruled in (1)(a) above, with the endorsement that it is to be given precedence over the name *Pararenosetella* Lang, 1944 whenever the two names are considered to be synonyms;
 - (b) *Pararenosetella* Lang, 1944 (gender: feminine), type species by original designation *Ectinosoma erythrops* Brady, 1880, with the endorsement that it is not to be given priority over the name *Halectinosoma* Vervoort, 1962 whenever the two names are considered to be synonyms.
- (3) The following names are hereby placed on the Official List of Specific Names in Zoology:
 - (a) *chrystalii* Scott, 1894, as published in the binomen *Ectinosoma chrystalii* (specific name of the type species of *Halectinosoma* Vervoort, 1962, as ruled in (1)(a) above);
 - (b) *erythrops* Brady, 1880, as published in the binomen *Ectinosoma erythrops* (specific name of the type species of *Pararenosetella* Lang, 1944).

History of Case 3470

An application to conserve the widespread usage of the name *Halectinosoma* Vervoort, 1962 for a common genus of primarily marine harpacticoid copepods in the family ECTINOSOMATIDAE was received from Rony Huys (*Natural History Museum, London, U.K.*) on 4 June 2008. After correspondence the case was published in BZN 65: 276–281 (December 2008). The title, abstract and keywords of the case were published on the Commission's website. No comments were received on this case.

Decision of the Commission

On 1 December 2009 the members of the Commission were invited to vote on the proposals published in BZN 65: 279. At the close of the voting period on 1 March 2010 the votes were as follows:

Affirmative votes – 18: Ballerio, Brothers, Grygier, Halliday, Harvey, Kojima, Krell, Lamas, Lim, Minelli, Ng, Patterson, Papp, Rosenberg, Winston, Yanega, Zhang and Zhou.

Negative votes – 9: Alonso-Zarazaga, Bogutskaya, Bouchet, Fautin, Kottelat, Kullander, Pape, Štys, and van Tol.

Pyle was on leave of absence.

Voting FOR, Grygier observed that the matters brought forth in this case might also be solved by selection of a neotype for *Ectinosoma sarsii* from among Sars's material. However, doing so would affect *H. pseudosarsi* (making it a junior synonym) and might be undesirable for the same reason mentioned at the end of paragraph 3 in the application, that no detailed description of males is available. It would also require Commission approval because of the admitted non-conspecificity of Sars's specimens with the nominal species itself. Grygier felt that on the whole, approval of the proposals was easier and satisfactory. Winston, also voting FOR, saw the case as reasonable in terms of stability and timely in view of current and future revisionary work.

Voting AGAINST, Alonso-Zarazaga said he could not understand the reason why a recent dubious name (*Halectinosoma*) was to be saved from being unused or from falling into synonymy beyond a personal liking of the applicant. The names are of interest for a few specialists; consequently Alonso-Zarazaga felt that the Principle of Priority must stand. He also drew attention to the fact that the case had raised no comments. Bouchet, also voting AGAINST, said that none of the species names of harpacticoid copepods involved in the application had been extensively used outside a small circle of copepodologists. None has economic importance, or been used as an ecological indicator, or a model organism. He saw no reason to butcher the provisions of the Code so extensively for so little result. Fautin, also voting AGAINST, commented that it seems that the identity of *Ectinosoma sarsii* is a taxonomic issue that can be resolved by designation of a neotype, which would also fix the genus-group concept. Kottelat, similarly voting AGAINST, suggested that this should have been two cases. The application indicated that the problem of the type species of *Halectinosoma* could be solved without the plenary power by designating a neotype for *H. sarsii*, for example a specimen of *H. chrystalii*. In the same vein, Kullander, voting AGAINST, observed that from the information provided in the case it was obvious that the type material of *E. sarsii* is lost and the diagnostics are uncertain. He said that a neotype should resolve the issue. Štys, voting

AGAINST, said that the taxonomic situation in the group concerned is complex, the classification was undergoing frequent changes, and even the applicant was envisaging potential further changes that might render the application rather redundant. Since the case is of a primary concern for the taxonomists studying Harpacticoida Štys believed that nomenclature would best be served by adherence to the Principle of Priority.

Original references

The following are the original references to the names placed on Official Lists by the ruling given in the present Opinion:

chrystalii, *Ectinosoma*, Scott, 1894, *Transactions of the Linnean Society of London. Ser. 2. Zoology*, **6**: 1–161, p. 92.

erythrops, *Ectinosoma*, Brady, 1880, *A monograph of the free and semi-parasitic Copepoda of the British Islands*, vol. 2, Ray Society, London, p. 12.

Halectinosoma Vervoort, 1962, *Publications of the Seto Marine Biological Laboratory*, **10**(2): 399.

Pararenosetella Lang, 1944, *Monographie der Harpacticiden (Vorläufige Mitteilung)*, Almqvist & Wiksells Boktryckeri, Uppsala, p. 6.

OPINION 2249 (Case 3471)***Heterolaophonte* Lang, 1948 (Crustacea, Copepoda, Harpacticoida): name conserved by precedence over *Mesolaophonte* Nicholls, 1941 and *Monolaophonte* Nicholls, 1941**

Abstract. The Commission has conserved the generic name *Heterolaophonte* Lang, 1948 for a group of marine harpacticoid copepods (family LAOPHONTIDAE) by giving it precedence over the unused senior names *Mesolaophonte* Nicholls, 1941 and *Monolaophonte* Nicholls, 1941 whenever these names are considered to be synonyms.

Keywords. Nomenclature; taxonomy; Copepoda; Harpacticoida; LAOPHONTIDAE; *Heterolaophonte*; *Mesolaophonte*; *Monolaophonte*; *Heterolaophonte stroemii*; harpacticoid copepod; cosmopolitan.

Ruling

- (1) Under the plenary power the generic name *Heterolaophonte* Lang, 1948 is hereby given precedence over the names *Mesolaophonte* Nicholls, 1941 and *Monolaophonte* Nicholls, 1941, whenever it and either of the other two are considered to be synonyms.
- (2) The entry on the Official List of Generic Names in Zoology for *Heterolaophonte* Lang, 1948 (gender: feminine), type species by original designation, *Cyclops stroemii* Baird, 1837, is hereby emended to record that it is to be given precedence over the names *Mesolaophonte* Nicholls, 1941 and *Monolaophonte* Nicholls, 1941, whenever it and either of the other two are considered to be synonyms.
- (3) The following names are hereby placed on the Official List of Generic Names in Zoology:
 - (a) *Mesolaophonte* Nicholls, 1941 (gender: feminine), type species by original designation *Laophonte littoralis* Scott & Scott, 1893, with the endorsement that it is not to be given precedence over the name *Heterolaophonte* Lang, 1948 whenever the two names are considered to be synonyms;
 - (b) *Monolaophonte* Nicholls, 1941 (gender: feminine), type species by monotypy *Laophonte curvata* Douwe, 1929, with the endorsement that it is not to be given precedence over the name *Heterolaophonte* Lang, 1948 whenever the two names are considered to be synonyms.
- (4) The following names are hereby placed on the Official List of Specific Names in Zoology:
 - (a) *littoralis* Scott & Scott, 1893, as published in the binomen *Laophonte littoralis* (specific name of the type species of *Mesolaophonte* Nicholls, 1941);
 - (b) *curvata* Douwe, 1929, as published in the binomen *Laophonte curvata* (specific name of the type species of *Monolaophonte* Nicholls, 1941).

History of Case 3471

An application to conserve the generic name *Heterolaophonte* Lang, 1948 for a group of marine harpacticoid copepods (family LAOPHONTIDAE) by giving it precedence over

the unused senior names *Mesolaophonte* Nicholls, 1941 and *Monolaophonte* Nicholls, 1941 was received from Rony Huys (*Natural History Museum, London, U.K.*) on 4 June 2008. After correspondence the case was published in BZN **65**: 282–287 (December 2008). The title, abstract and keywords of the case were published on the Commission's website. No comments were received on this case.

Decision of the Commission

On 1 December 2009 the members of the Commission were invited to vote on the proposals published in BZN **65**: 284–285. At the close of the voting period on 1 March 2010 the votes were as follows:

Affirmative votes – 20: Ballerio, Brothers, Fautin, Grygier, Halliday, Harvey, Kojima, Krell, Lamas, Lim, Minelli, Ng, Patterson, Papp, Rosenberg, Štys, Winston, Yanega, Zhang and Zhou.

Negative votes – 7: Alonso-Zarazaga, Bogutskaya, Bouchet, Kottelat, Kullander, Pape, and van Tol.

Pyle was on leave of absence.

Voting FOR, Grygier noted that in paragraph 4 of the application, Krishnaswamy's species name *pseudo-oculata* should have been corrected to *pseudooculata*, not *pseudoculata*; Article 32.5.2.3 requires only removal of the hyphen, not further elision. Also, in case the present proposals had been rejected, the author should have taken this opportunity to act as first reviser in determining the relative priority of Nicholls' two simultaneously published genera. If that has already been done elsewhere, it should have been mentioned.

Voting AGAINST, Alonso-Zarazaga said he felt that the reasons given to accept a reversal of precedence for names made available during the 20th century were weak. The names are of interest for a few specialists; consequently, he felt that the Principle of Priority must stand. He noted that the case had raised no comments. Bouchet, also voting AGAINST, said that conditional reversal of precedence is a source of nomenclatural instability, and he would not vote in favour of a proposal that rests on such conditional reversal of precedence. None of the species names of harpacticoid copepods involved in the application has been extensively used outside a small circle of copepodologists. None has economic importance, or been used as an ecological indicator, or a model organism. He felt that priority should prevail. Kullander, also voting AGAINST, said that the original spelling *stromii* should be maintained, not the incorrect subsequent spelling *stroemii*.

Original references

The following are the original references to the names placed on Official Lists by the ruling given in the present Opinion:

- curvata*, *Laophonte*, Douwe, 1929, *Zoologischer Anzeiger*, **83**(11/12): 286.
- Heterolaophonte* Lang, 1948, *Monographie der Harpacticiden*, Håkan Ohlsson, Lund, p. 34.
- littoralis*, *Laophonte*, Scott & Scott, 1893, *Annals and Magazine of Natural History*, (6)**12**: 238.
- Mesolaophonte* Nicholls, 1941, *Records of the South Australian Museum*, **7**(1): 102.
- Monolaophonte* Nicholls, 1941, *Records of the South Australian Museum*, **7**(1): 104.

OPINION 2250 (Case 3401)***Delognatha* Lacordaire, 1859 (Insecta, Coleoptera): name conserved**

Abstract. The Commission conserved the name *Delognatha* Lacordaire, 1859 for a tenebrionid beetle genus from the Neotropical Region by suppression of the name *Delognatha* Agassiz, 1846.

Keywords. Nomenclature; taxonomy; Coleoptera; TENEBRIONIDAE; PHRENAPATINAE; PIMELIINAE; *Delognatha*; *Dailognatha*; *Delognatha lacordairei*; darkling beetles.

Ruling

- (1) Under the plenary power it is hereby ruled that the generic name *Delognatha* Agassiz, 1846 is suppressed for the purposes of both the Principle of Priority and the Principle of Homonymy.
- (2) The name *Delognatha* Lacordaire, 1859 (gender: feminine), type species *Delognatha lacordairei* Lacordaire, 1859 by subsequent designation by Gebien (1940), is hereby placed on the Official List of Generic Names in Zoology.
- (3) The name *lacordairei* Lacordaire, 1859, as published in the binomen *Delognatha lacordairei* (specific name of the type species of *Delognatha* Lacordaire, 1859) is hereby placed on the Official List of Specific Names in Zoology.
- (4) The name *Delognatha* Agassiz, 1846, as suppressed in (1) above, is hereby placed on the Official Index of Rejected and Invalid Generic Names in Zoology.

History of Case 3401

An application to conserve the name *Delognatha* Lacordaire, 1859 for a tenebrionid genus from the Neotropical Region by suppression of the name *Delognatha* Agassiz, 1846, which has not been used as valid other than by two authors after it was established more than 150 years ago, was received from Patrice Bouchard (*Canadian National Collection of Insects, Arachnids and Nematodes, Agriculture and Agri-Food Canada, Ottawa, Ontario, Canada*) and Ivan Löbl (*Muséum d'Histoire Naturelle, Geneva, Switzerland*) on 30 October 2006. After correspondence the case was published in BZN 65: 194–197 (September 2008). The title, abstract and keywords of the case were published on the Commission's website. No comments were received on this case.

Decision of the Commission

On 1 September 2009 the members of the Commission were invited to vote on the proposals published in BZN 65: 195. At the close of the voting period on 1 December 2009 the votes were as follows:

Affirmative votes – 24: Alonso-Zarazaga, Ballerio, Bogutskaya, Bouchet, Brothers, Fautin, Grygier, Halliday, Harvey, Kojima, Kottelat, Krell, Lamas, Minelli, Ng, Pape, Papp, Patterson, Rosenberg, Štys, Winston, Yanega, Zhang and Zhou.

Negative votes – 3: Kullander, Lim and van Tol.

Pyle was on leave of absence.

Rosenberg, voting FOR the proposals, said that Agassiz 1846 (p. 118) did not list *Delognatha* Dejean as an emendation of *Dailognatha* Stevens; he merely cross-referenced it, saying ‘*Delognatha* Dej. Col. 1833 (V[ide] *Dailognatha*)’. Even if Agassiz had intended an emendation (as might be inferred from his parenthetical use of the name on p. 116: ‘*Dailognatha* (Stev.) Eschs. Col. 1831 (*Delognatha*)’), he did not use *Delognatha* as valid. Therefore, *Delognatha* Agassiz, 1846 is not an available name, and no action is necessary. Nonetheless, he voted for the case on the assumption that the Opinion can provide this clarification under Article 80.2.1, which does not involve use of the plenary power.

Original references

The following are the original references to the names placed on Official Lists by the ruling given in the present Opinion:

Delognatha Agassiz, 1846, *Nomenclatoris zoologici index universalis, continens nomina systematica classium, ordinum, familiarum et generum animalium omnium, tam viventium quam fossilium, secundum ordinem alphabeticum unicum disposita, adjectis homonymiis plantarum, nec non variis adnotationibus et emendationibus*. viii, 393 pp. Jent & Gassmann, Soloduri [= Solothurn, Switzerland], p. 118.

Delognatha Lacordaire, 1859, *Histoire naturelle des insectes. Généra des coléoptères ou exposé méthodique et critique de tous les genres proposés jusqu’ici dans cet ordre d’insectes. Tome cinquième. Première partie contenant les familles des Ténébrionides, Cistélides, Nilionides, Pythides, Mélandryides, Lagriides, Pédilides, Anthicides, Pyrochroïdes, Mordellides, Rhipiphorides, Stylopides, Meloïdes et Oedémérides*. 750 pp. Librairie Encyclopédique de Roret, Paris, p. 315.

lacordairei, Delognatha, Lacordaire, 1859, *ibid.* 750 pp. Librairie Encyclopédique de Roret, Paris, p. 316.

OPINION 2251 (Case 3442)***Columba norfolciensis* Latham, 1801 (Aves, COLUMBIDAE): name suppressed**

Abstract. The Commission has suppressed the ambiguous binomen *Columba norfolciensis* Latham, 1801, which has been applied to three different species in different columbid genera within the last hundred years.

Keywords. Nomenclature; taxonomy; COLUMBIDAE; *Columba norfolciensis*; Australasia.

Ruling

- (1) Under the plenary power the name *norfolciensis* Latham, 1801, as published in the binomen *Columba norfolciensis*, is hereby suppressed for the Purposes of the Principle of Priority but not for those of the Principle of Homonymy.
- (2) The name *norfolciensis* Latham, 1801, as published in the binomen *Columba norfolciensis* and as suppressed in (1) above, is hereby placed on the Official Index of Rejected and Invalid Specific Names in Zoology.

History of Case 3471

An application to suppress the ambiguous binomen *Columba norfolciensis* Latham, 1801, was received from Richard Schodde (*Australian Biological Resources Study, Canberra, Australia*) and Walter J. Bock (*Department of Biological Sciences, Columbia University, New York, NY, U.S.A.*) on 23 October 2007. After correspondence the case was published in BZN **65**: 124–128 (June 2008). The title, abstract and keywords of the case were published on the Commission's website. No comments were received on this case.

Decision of the Commission

On 1 September 2009 the members of the Commission were invited to vote on the proposals published in BZN **65**: 126. At the close of the voting period on 1 December 2009 the votes were as follows:

Affirmative votes – 24: Alonso-Zarazaga, Ballerio, Brothers, Bogutskaya, Fautin, Halliday, Harvey, Kojima, Kottelat, Krell, Kullander, Lamas, Minelli, Ng, Patterson, Pape, Papp, Rosenberg, Štys, van Tol, Winston, Yanega, Zhang and Zhou.

Negative votes – 3: Bouchet, Grygier and Lim.

Pyle was on leave of absence.

Voting FOR, Ng said that he was inclined to agree with the specialist body that had considered this matter at length as, in the context of the arguments presented, there were so many possible interpretations.

Voting AGAINST, Bouchet said that from his reading of the facts as presented in the application, he agreed with the authors that it was not desirable to replace the names *Columba leucomela* Temminck, 1821, or *Chalcophaps indica sandwichensis*

Ramsay, 1876, by the name *Columba norfolciensis* Latham, 1801. However, he noted that there was a strong possibility that Latham's name designated a Norfolk Island bird that is now extinct. Suppression of that name would leave the extinct bird without a name. He thought that was not desirable, hence voted against the proposals. Grygier, also voting AGAINST, said that it is not clear from the application how damaging the loss of the name *sandwichensis* would be, if a Norfolk Island specimen of *Chalcophaps indica* (belonging to this same subspecies) were designated the neotype of the older name *norfolciensis*; *sandwichensis* is only said to be an "in-use name", with no citations demonstrating its frequency or prevalence of use.

Original reference

The following is the original reference to the name placed on Official Lists by the ruling given in the present Opinion:

norfolciensis, *Columba*, Latham, 1801, *Supplementum Indicis Ornithologici, sive Systematis Ornithologiae*, Leigh & J. & S. Sotheby, London, p. 60.

OPINION 2252 (Case 3449)***Diomedea melanophris* Temminck, 1828 (currently *Thalassarche melanophris*; Aves, Procellariiformes): original spelling of specific name conserved**

Abstract. The Commission has ruled to confirm that, with respect to the specific name of the black-browed albatross *Diomedea melanophris* Boie in Temminck, 1828 (currently *Thalassarche melanophris*) *melanophris* is the correct original spelling.

Keywords. Nomenclature; taxonomy; Aves; Procellariiformes; DIOMEDEIDAE; *Thalassarche melanophris*; *Thalassarche melanophris*; black-browed albatross; Atlantic, Indian and Pacific Oceans.

Ruling

- (1) The Commission hereby rules to confirm that *melanophris* Temminck, 1828, as published in the binomen *Diomedea melanophris*, is the correct original spelling.
- (2) The name *melanophris* Temminck, 1828, as published in the binomen *Diomedea melanophris*, as ruled in (1) above is hereby placed on the Official List of Specific Names in Zoology.
- (3) The name *melanophris* Temminck, 1839, as published in the binomen *Diomedea melanophris* (incorrect subsequent spelling of *Diomedea melanophris* Temminck, 1828, correct original spelling as ruled in (1) above), is hereby placed on the Official Index of Rejected and Invalid Specific Names in Zoology.

History of Case 3449

An application to rule that the name of the black-browed albatross *Diomedea melanophris* Boie in Temminck, 1828 (currently *Thalassarche melanophris*) be confirmed as the correct original spelling was received from Caio J. Carlos (*Departamento de Oceanografia, Fundação Universidade Federal do Rio Grande, Brazil and Comitê Brasileiro de Registros Ornitológicos (Brazilian Committee of Ornithological Records)*) and Jean-François Voisin (*Département Ecologie et Gestion de la Biodiversité, Muséum National d'Histoire Naturelle, Paris, France*) on 10 January 2008. After correspondence the case was published in BZN 65: 129–131 (June 2008). The title, abstract and keywords of the case were published on the Commission's website. No comments were received on this case.

Decision of the Commission

On 1 September 2009 the members of the Commission were invited to vote on the proposals published in BZN 65: 131. At the close of the voting period on 1 December 2009 the votes were as follows:

Affirmative votes – 20: Brothers, Bouchet, Bogutskaya, Fautin, Grygier, Halliday, Harvey, Krell, Kullander, Lamas, Ng, Patterson, Papp, Rosenberg, Stys, van Tol, Winston, Yanega, Zhang and Zhou.

Negative votes – 5: Alonso-Zarazaga, Ballerio, Lim, Minelli and Pape.

Kottelat split his vote, voting AGAINST proposals (1) and (3), and FOR proposal (2).

Kojima abstained. Pyle was on leave of absence.

Voting FOR, Grygier noted that in the case, paragraph 6, line 11, semantic context requires the word ‘alternative’ in place of ‘result’. Furthermore, both alternatives – the other being to declare *melanophrys* a justified emendation – should have been presented for a vote in order to explicitly settle the matter the other way if the proposals should fail. Halliday, also voting FOR, said he had a concern about the inappropriate use of the *Chi*-squared statistic in paragraph 5. There is no theoretical reason for expecting the usages of the names *melanophrys* and *melanophris* to occur in a 1:1 ratio, so *Chi*-squared should not be used to test for deviation from that expectation. The result in this case is obvious, and the use or non-use of *Chi*-squared here does not affect the outcome. Halliday felt that, in general, the Commission should discourage the use of statistical tests to define the meaning of ‘a substantial majority’ in prevailing usage. Ng, voting FOR, said that in cases like these, maintaining the original spelling, regardless of perceived error or intents, is the best solution. Rosenberg, voting FOR, said that the application was flawed in stating that a vote against placing *melanophris* on the Official List is also a vote for placing *melanophrys* on the List. One could vote against *melanophris* on the grounds that no application was necessary as it is currently the correct name under the Code. The authors are aware of this, however, and explicitly request a ruling (paragraph 6) in the hopes of coalescing usage. If the vote favours *melanophris*, the Commission would act under Article 80.2.1, which does not involve the use of the plenary power. Štys, voting FOR, noted that proposal (3) should have been properly formulated. *Diomedea melanophrys* as used by Temminck (1839) is a subsequent incorrect spelling of *Diomedea melanophris* Temminck, 1828, and as an unavailable name cannot have Temminck, 1839 as its taxonomic author.

Voting AGAINST, Alonso-Zarazaga said that, all other things being equal, the authors should have selected the etymologically correct transliteration from Greek, ‘*melanophrys*’. Zoological nomenclature is based on correct Latin and Greek as far as possible. This applies to all languages and is highlighted in Recommendation 11A, which states ‘Appropriate latinization is the preferred means of formation of names from vernacular words’. Alonso-Zarazaga proposed that the Commission select the alternative spelling ‘*melanophrys*’ and place it on the Official List. Pape, voting AGAINST, said that Article 32.2 explicitly states that ‘The original spelling of a name is the ‘correct original spelling’, unless it is demonstrably incorrect’. As the latter does not seem to be the case, the spelling ‘*melanophris*’ stands and there is no need for a ruling.

Kottelat SPLIT his vote, noting that application of the Code solves the purported problem and no decision of the Commission was needed. Therefore he saw no reason to vote on this case and thus voted AGAINST proposal (1). He said he had no problem placing *melanophris* on the Official List (proposal (2)) if this would help people to understand that this spelling is correct. He is against placing *melanophrys* on the Official Index (proposal (3)) because it is an Index of Invalid or Rejected Names not an Index of Incorrect Spellings. Having *melanophris* on the Official List

and *melanophrys* on the Official Index would actually mean having the same name at the same time in both the Index and the List.

Kojima ABSTAINED for two reasons. First, the use of a statistical test for prevailing usage given in paragraph 5 did not make sense to him. Second, the meaning of the last sentence of paragraph 6 is unclear. Do the authors make two proposals? That is, if proposal (1) is rejected, then proposal (2) is automatically applied.

Original references

The following are the original references to the names placed on Official Lists by the ruling given in the present Opinion:

melanophris, *Diomedea*, Temminck, 1828, *Nouveau recueil de planches coloriées d'Oiseaux pour servir de suite et de complément aux planches enluminées de Buffon*, livraison 77. Levrault, Paris, text to pl. 456.

melanophrys, *Diomedea*, Temminck, 1839, *Nouveau recueil de planches coloriées d'Oiseaux pour servir de suite et de complément aux planches enluminées de Buffon*. livraison 102, Levrault, Paris, p. 76.

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The Bulletin of Zoological Nomenclature

The Official Periodical of the
International Commission
on Zoological Nomenclature



ICZN

THE BULLETIN OF ZOOLOGICAL NOMENCLATURE

The *Bulletin* is published four times a year for the International Commission on Zoological Nomenclature by the International Trust for Zoological Nomenclature, a registered charity (no. 211944) based in the U.K. The annual subscription for 2011 is £200 or US\$340 or €280, postage included; individual subscribers for personal use are offered a subscription of £100 or US\$170 or €140. All manuscripts, letters and orders should be sent to:

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Cover image: *Cyanea annasethe* (Haeckel, 1879), a scyphomedusa illustrated by Ernst Haeckel in *Kunstformen der Nature*, plate 8, fig. 1 as “*Desmonema Annasethe*” (an enhanced image of “*Desmonema Annasethe*” previously figured by the same author in *Das System der Medusen*, plate XXX, fig. 1).

BULLETIN OF ZOOLOGICAL NOMENCLATURE

Volume 67, part 3 (pp. 197–268)

30 September 2010

Notices

(1) Applications and correspondence relating to applications to the Commission should be sent to the Executive Secretary at the address given on the inside of the front cover and on the Commission website. English is the official language of the *Bulletin*. Please take careful note of instructions to authors (present in a one or two page form in each volume and available online at <http://iczn.org/content/guidelines-case-preparation>) as incorrectly formatted applications will be returned to authors for revision. The Commission's Secretariat will answer general nomenclatural (as opposed to purely taxonomic) enquiries and assist with the formulation of applications and, as far as it can, check the main nomenclatural references in applications. Correspondence should be sent by e-mail to 'iczn@nhm.ac.uk' where possible.

(2) The Commission votes on applications eight months after they have been published, although this period is normally extended to enable comments to be submitted. Comments for publication relating to applications (either in support or against, or offering alternative solutions) should be submitted as soon as possible. Comments may be edited (see instructions for submission of comments at <http://iczn.org/content/instructions-comments>).

(3) Requests for help and advice on the Code can be made direct to the Commission and other interested parties via the Internet. Membership of the Commission's Discussion List is free of charge. You can subscribe and find out more about the list at <http://list.afriherp.org/mailman/listinfo/iczn-list>.

(4) The Commission also welcomes the submission of general-interest articles on nomenclatural themes or nomenclatural notes on particular issues. These may deal with taxonomy, but should be mainly nomenclatural in content. Articles and notes should be sent to the Executive Secretary.

New applications to the Commission

The following new applications have been received since the last issue of the *Bulletin* (volume 67, part 2, 30 June 2010) went to press. Under Article 82 of the Code, the existing usage of names in the applications is to be maintained until the Commission's rulings on the applications (the Opinions) have been published.

CASE 3526: *Salmo formosanus* Jordan & Oshima, 1919 (currently *Oncorhynchus formosanus*) (Pisces, SALMONIDAE): proposed conservation of the specific name. H.-C. Ho & J.-C. Gwo.

CASE 3527: *Anguis jamaicensis* Shaw, 1802 (currently *Typhlops jamaicensis*; Reptilia, Serpentes): proposed conservation of the specific name by a ruling that it is not to be treated as a replacement name for *A. lumbricalis* Linnaeus, 1758 (currently

T. lumbricalis) and the designation of neotypes for both taxa. M. Domínguez & R.E. Díaz, Jr.

CASE 3528: *Ephippus* Cuvier, 1816, EPHIPPIDAE Gill, 1861, *Scatophagus* Cuvier, 1831 and SCATOPHAGIDAE Bleeker, 1876 (Osteichthyes): proposed conservation of current usage by designation of *Chaetodon orbis* Bloch, 1787 as type species of *Ephippus*. M. Kottelat.

CASE 3529: *Otiorhynchus* Germar, 1824 and *Loborhynchus* Schoenherr, 1823 (Insecta, Coleoptera): proposed emendation of entries on the Official Lists of Names and Works in Zoology. C.H.C. Lyal & M.A. Alonso-Zarazaga.

CASE 3530: PLINTHINI Lacordaire, 1863 and *Plinthus* Germar, 1817 (Insecta, Coleoptera): proposed conservation by validation of *Curculio megerlei* Panzer, [1804] as type species. M.A. Alonso-Zarazaga & C.H.C. Lyal.

CASE 3531: *Sematura* Dalman, 1825 (Insecta, Lepidoptera, SEMATURIDAE): proposed precedence over *Mania* Hübner, 1821. M.J.W. Cock & G. Lamas.

CASE 3532: *Murex tubercularis* Montagu, 1803 (currently *Cerithiopsis tubercularis*; Mollusca, Gastropoda, CERITHIOPSIDAE): proposed conservation of usage of the specific name by designation of a neotype. A. Cecalupo & E. Robba.

CASE 3533: *Neobisium* Chamberlin, 1930 (Arachnida, Pseudoscorpiones): proposed precedence over *Blothrus* Schiödte, 1847. M.S. Harvey & V. Mahnert.

Trustee John Callomon 1928–2010

We deeply regret to announce the death of Professor John Callomon, who was a Trustee of the ITZN from 1980 to 2007. John Callomon was a Professor of Chemistry at University College, London, and distinguished for his research in high-resolution molecular spectroscopy. He was a polymath, and also renowned for his work in taxonomy. His principal contribution was in advancing stratigraphical concepts and palaeobiology of Jurassic ammonites, the fossils which form the basis for biostratigraphical division of the Jurassic System. His interest in palaeontology stemmed from pre-university days and he became an internationally acknowledged expert in this field. He recognised the importance of detailed examination of populations of specimens, combining an understanding of taxonomic and intra-specific variation of organisms. This led to his pioneering discovery of sexual dimorphism in ammonites, which in turn improved our ability to understand their biology, to define taxa and to use them in geological dating. His clarity of thought and keen participation in any field-based enterprises involving Jurassic strata will be missed by many. The Trust and Secretariat send condolences to Prof. Callomon's family and colleagues, with thanks for his support of the aims of the ICZN through his many years of service to the ITZN.

International Commission on Zoological Nomenclature Fundraising Lecture

Thursday 16 December at 7.00 pm Ondaatje Theatre, Royal Geographical Society,
London

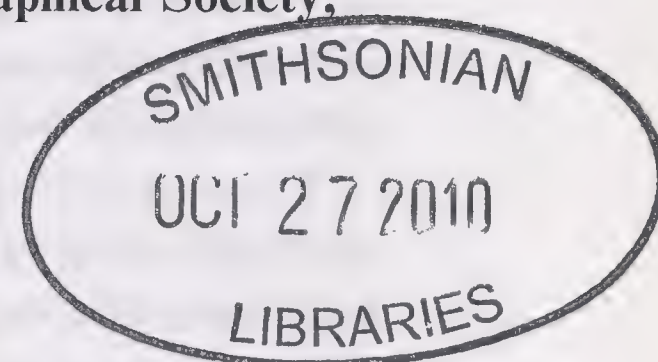
What's in a name?**Sir David Attenborough and Prof. Richard Fortey on animals**

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**Contributions to the Discussion on Electronic Publication V****Introduction**

This is the fifth instalment of comments on the ICZN proposed amendment on electronic-only publication, which would allow publication of nomenclatural acts on exclusively electronic media to be valid and available. The proposed amendment is available in the BZN **65**: 265–275, online at <http://iczn.org/epub> and further discussion at <http://iczn.org/content/availability-electronic-publication>. We have sought input from all stakeholders in this process, including taxonomists, publishers, archivists, database experts and the wide range of users of nomenclatural information. The IUBS has approved the principles underlying the proposed amendment.

The date for the Commission's vote has not yet been set. We will initiate a new method for making comments available online on the ICZN website in advance of the print copy of the BZN, thus we will welcome further contributions on this topic in the near future. We also encourage continued debate through listservers (e.g. ICZN listserver (<http://list.afriherp.org/mailman/listinfo/iczn-list>) and Taxacom (<http://mailman.nhm.ku.edu/mailman/listinfo/taxacom>)) and the various journals that have published the proposed amendment.

Ellinor Michel, Svetlana Nikolaeva, Steve Tracey, Natalie Dale-Skey & Edward Baker

(1) Gerhard Haszprunar and Stefan Schmidt

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As editors of our house journal *Spixiana* and the *Journal of Hymenoptera Research* we would like to make a comment and recommendation regarding the acceptance of

electronic-only publication of nomenclatural acts. We fully support the Commission's pioneering work in proposing an amendment to the Code, as published in the *Bulletin of Zoological Nomenclature*, *Zootaxa* and several other journals in October 2008. We also agree that electronic-only publication of such acts must be allowed following the adoption of this amendment.

There is little doubt that in just a few years hard copy publication of *Spixiana* and the *Journal of Hymenoptera Research* will probably cease altogether, as is the case with several existing journals. We also fully support the proposal that mandatory registration of all electronic-only published acts in the ZooBank register should be required before any such acts can be considered valid. We are more than willing to implement mandatory registration on all acts published in our journal. We would hope that retrospective registration of all previous acts back to Linnaeus (1758) will follow shortly.

We are concerned that the proposed amendment was published 18 months ago, and yet the amendment is still under discussion. We strongly support the adoption of this amendment, we congratulate the Commission and the Commission Secretariat on this initiative, and we recommend rapid action to implement the amendment into the current Code.

(2) Lyubomir Penev (ZooKeys)

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With this letter, ZooKeys (www.pensoftonline.net/zookeys) wants to express its unequivocal support for the proposed amendment to the Code of Zoological Nomenclature (ICZN, 2008) to allow electronic-only publication of nomenclatural acts. We have expressed our opinion in several fora and in personal conversations with the Executive Secretary and several ICZN Commissioners. Let us, however, highlight once again the steps ZooKeys has undertaken since its inception less than two years ago to support e-only publications and development of e-based publishing, dissemination and archiving of taxonomic information.

ZooKeys was the first taxonomic journal to implement several important innovations towards e-publishing, such as:

- (1) Mandatory registration of all newly described taxa in ZooBank.
- (2) Mandatory open access to published contents.
- (3) Mandatory archiving of new taxon names with the Encyclopedia of Life (including text descriptions), Globalnames.org, Wikispecies and others.
- (4) Mandatory indexing of published specimen record datasets through the GBIF infrastructure.
- (5) Development of protocols and methods for publication of datasets and interactive key files.
- (6) Development of XML-based work flow to implement the TaxPub XML schema (an extension of the National Library of Medicine DTD) allowing automated dissemination, indexing and archiving of published content (see also www.plazi.org).

At the same time, ZooKeys continues to produce a full-colour, high-resolution printed version, for those libraries or private customers who prefer to have the journal in print.

The reasons for our strong support of the proposed amendment may be summarised as follows:

(1) Advances in digital printing technology mean that the line between electronic and paper publishing is becoming obscured. In a growing number of cases, it is virtually impossible to know whether certain provisions of the Code concerning paper copies and library archiving have been met (Krell, 2009).

(2) Presence of paper copies does not guarantee stable preservation anymore because the risk that a few printed copies will get lost is much higher than that of a properly published, disseminated and archived e-publication.

(3) Dissemination of e-publications is incomparably more efficient than that of the printed versions. Proper archiving of electronic content by the journal coupled with wide circulation mean that news of new nomenclatural acts can be spread almost instantaneously through email lists, RSS feeds, and other electronic means. Dissemination of electronic documents within the taxonomic community is at least as good a guarantee of archival preservation as those specified for paper publications in the current Code.

(4) Publications available in electronic form can be disseminated around the world with much greater ease and efficiency than paper-only publications. This is particularly important because the world's most complete science libraries tend to be located far from the greatest concentrations of biodiversity.

(5) Recently developed standards and technologies for data publishing, with leadership from TDWG and GBIF, could make printed documents and perhaps even PDFs irrelevant to taxonomic publishing, possibly within just a few years.

(6) We anticipate that new generations of taxonomists will tend to decrease their reliance on paper publications. Future taxonomists will expect access to all contemporary and to most historical literature from their institutional computers. Satisfying this expectation will make taxonomic contributions more efficient to produce and easier to use.

(7) Curtailing consumption of paper saves nature!

Our support for e-only publications should be considered valid if four preconditions are clearly met:

(1) Mandatory registration of nomenclatural acts in ZooBank including most important aspects of the act: name, author, publication metadata, type specimen/species.

(2) Requirements for archiving of e-only publications in a limited number of internationally recognised, ISO-certified archives. Our strong recommendation is for PubMedCentral because (i) they are supportive of taxonomy through developing their TaxPub NLM DTD extension, (ii) PubMedCentral and PubMed are closely interlinked with NCBI and GenBank, and (iii) their archiving requirements are strict enough to guarantee long-term preservation of published information.

(3) Recommendation for deposition and dissemination of published nomenclatural acts, as well as data on type material, to a list of internationally recognised, general or taxon-based aggregators.

(4) Recommendation for all nomenclatural acts to be published open access, or to be made open access within six months after publishing.

The list of people who supported ZooKeys' opinion can be seen at <http://pensoftonline.net/zookeys/Letter>.

References

- ICZN (International Commission on Zoological Nomenclature).** 2008. Proposed amendment of the International Code of Zoological Nomenclature to expand and refine methods of publication. *Zootaxa*, **1908**: 57–67 (also published in: *Biological Journal of the Linnean Society*, **95**: 874–881; *Zoological Journal of the Linnean Society*, **154**: 848–855; *African Invertebrates*, **49**: 1–11; *Bulletin of Zoological Nomenclature*, **65**: 265–275; *Journal of Crustacean Biology* (2009), **29**: 275–280).
- Krell, F.-T.** 2009. ZooBank and the next edition of the Code – challenges and new developments in the 250th year of zoological nomenclature. *Aquatic Insects*, **31** (Suppl. 1): 269–282.

Case 3520***Boccardia proboscidea* Hartman, 1940 (Annelida, SPIONIDAE): proposed conservation of the specific name**

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Abstract. The purpose of this application, under Articles 23.9.3, 75.5 and 81.1 of the Code, is to conserve the much-used specific name *Boccardia proboscidea* Hartman, 1940 for a widely dispersed mudworm (family SPIONIDAE) from California. It is proposed that the name *Boccardia proboscidea* be given precedence over its rarely used senior subjective synonym *Polydora californica* Treadwell, 1914, and that previous type fixations for *Boccardia proboscidea* Hartman, 1940 be set aside and one specimen be designated as neotype for this species. It is also proposed that an untypified name *Spio californica* Fewkes, 1889 be suppressed to avoid unnecessary confusion.

Keywords. Nomenclature; taxonomy; Annelida; SPIONIDAE; *Boccardia proboscidea*; *Polydora californica*; *Spio californica*; mudworm; California.

1. Fewkes (1889, p. 37) described a new polychaete species, *Spio californica*, based on material which he collected in Santa Barbara, California, in 1887. He did not illustrate the material but reported that ‘In the fifth body segment there is a fan-shaped, deeply embedded bundle of large spines in addition to the dorsal and ventral clusters’ (Fewkes, 1889, p. 38). Heavy spines in segment 5 is a characteristic feature of *Polydora* Bosc, 1802 and what we would now call in a general sense polydorins (a group of related genera sharing this apomorphy). Remarkably, although the name *Polydora* was in wide use at Fewkes’s time, he did not refer his new species to this or any other polydorin genus.

2. There is no information concerning the whereabouts of type specimens of *Spio californica*. Crustaceans collected by Fewkes during his 1887 trip to California are deposited at the Museum of Comparative Zoology (MCZ), Harvard University, Cambridge, Massachusetts, where Fewkes worked as an assistant in charge of lower invertebrates under Alexander Agassiz from 1881 to 1889 (Swanton, 1931). Owing to Fewkes’s association with this museum it is assumed that his other west coast specimens would have been deposited there as well. The only other museums that would be likely candidates to have received Fewkes’s material are the Peabody

Museum of Natural History, Yale University, New Haven, and the American Museum of Natural History, New York. Requests for Fewkes's *S. californica* material were sent to these museums and each indicated *S. californica* was not deposited there.

3. Treadwell (1914, p. 203) described a new polychaete species, *Polydora californica*, based on material which he received for examination from the University of California, Berkeley. Treadwell (1914, p. 204) reported that a single incomplete specimen was 'taken from a tangled mass of tubes apparently constructed by the Polydora. No locality was recorded.' The belief that the animal was collected from California is based on the assumption that Treadwell would not have given it the epithet *californica* unless he had information to that effect. Treadwell did not make any reference to *Spio californica*, but was presumably aware of it as he listed Fewkes's paper in his bibliography and recorded another species, *Sabellaria californica*, described by Fewkes (1889) in the same paper (Treadwell, 1914, pp. 227, 228).

4. Along with the description of *Polydora californica*, Treadwell (1914, p. 204) noted that the 'Type [is] in the Museum of the University of California.' In the 1940s the UC polychaete collection was transferred to the Allan Hancock Foundation (AHF), University of Southern California, Los Angeles and later in 1988 to the Natural History Museum of Los Angeles County (LACM), Los Angeles. Two samples in the LACM-AHF polychaete collection are referable to Treadwell's species. One of them, LACM-AHF POLY 1555 has a small handwritten label '*Polydora californica* Treadwell. D5808' and another label that says 'Type'; both labels are in Hartman's handwriting. This sample was mentioned in Hartman's personal catalogue as: 'N 3255 *Polydora brachycephala* Hartman. San Francisco Bay, Calif. Albatross Sta D5808. (1). (labelled *P. californica* by Treadwell 1914).' This sample has been examined and found to consist of a single 38-chaetiger anterior fragment of a big worm in good condition. This specimen completely fits the diagnostic features of *Polydora brachycephala* Hartman and was one of the specimens she used to describe the species. As Hartman was aware that Treadwell had only a single specimen from an unknown locality (Hartman, 1940, p. 387) it has been assumed that the word 'Type' refers to *Polydora brachycephala*. This lot was cited in the original description of *P. brachycephala* although not specifically as a type. Another sample, LACM-AHF POLY 0638, has a small handwritten label (possibly in Treadwell's handwriting) '*Polydora californica* Treadwell. Type'. This sample was mentioned in Hartman's personal catalogue as: 'N 3254 Holotype *Polydora californica* Treadwell. No locality. Homonym. This is *Boccardia proboscidea* (1).' This sample has been examined and found to consist of a 57-chaetiger anterior fragment ca. 11 mm long and 0.9 mm wide, and 40-chaetiger posterior fragment ca. 5 mm long without pygidium, both in reasonably good condition. This specimen completely matches the description of *Polydora californica* and is considered herein as the only type (holotype) of Treadwell's species. Moreover, it does not fit a diagnosis of any other *Boccardia* species reported from California, but absolutely matches what Hartman (1940) described as *B. proboscidea*. It has the following characteristic features of *B. proboscidea*: (1) dark pigment line along each side of the prostomium, (2) prostomium anteriorly rounded, (3) caruncle extending to end of chaetiger 3, (4) chaetiger 1 with capillaries in both rami, (5) chaetiger 5 without dorsal superior

capillaries, (6) posterior notopodia with only capillaries, and (7) hooks in neuropodia accompanied by 1–2 inferior capillaries only in chaetigers 7–9.

5. Hartman (1940, p. 383) described a new polychaete species, *Boccardia proboscidea*, based on material which she collected in Caspar, California, in 1934. Along with the description of the new species Hartman (1940) provided a ‘Systematic discussion’ on the species of *Polydora* (sensu lato) from the west coast of the Americas. She noticed the presence of large spines on the fifth body segment in *Spio californica* Fewkes, 1889 but in the absence of type material confessed that ‘It is difficult (perhaps impossible) to know what this is’ (Hartman, 1940, p. 386). In print Hartman even doubted the inclusion of the species in the family SPIONIDAE because of the tube morphology reported by Fewkes, but finally concluded that ‘I am unable to regard this as anything more than a *Polydora* in the broad sense’ (Hartman, 1940, p. 387), i.e. as what we would now call a polydorin.

6. Hartman (1940, p. 387) noted that *Polydora californica* Treadwell 1914 ‘may be the same as the species herein described [*B. proboscidea*], but since the name turns out to be a questionable homonym, it should be replaced by another’. Nevertheless, nowhere in the text or in her later publications did she specifically state that *B. proboscidea* was the replacement name for *P. californica*. Moreover, Hartman later (1956, 1959) referred Treadwell’s species to *Boccardia* sp.

7. Hartman sent some specimens of *B. proboscidea* to the United States National Museum of Natural History, Smithsonian Institution (USNM), Washington, D.C. and also deposited some at the Zoological Museum of the University of California (UC), Berkeley. In her paper, however, she only reported a holotype lot (USNM 20217) from Caspar, California (Hartman, 1940, p. 385), which in fact contains 12 specimens. It is impossible to tell from the description which specimen, if any, she intended to be the holotype. Along with the type of *P. californica* the UC lot of *B. proboscidea* was transferred in the 1940s to the Allan Hancock Foundation, University of Southern California, Los Angeles and later in 1988 to the Natural History Museum of Los Angeles County, Los Angeles. There is ample evidence in Hartman’s personal papers & collection to show that this lot, LACM-AHF POLY 1226, was also considered by Hartman to be a type lot (LACM-AHF Polychaete Collection archives, unpublished). The specimens in both lots were collected by Hartman on 4 July 1934, from vertical burrows in intertidal sandstone at Caspar, Mendocino County, California. They have been examined and found to include specimens of the same species in good condition. Because it is not possible to identify the holotype in a so-called ‘holotype lot’, and the neotype designation is essential to maintain nomenclatural stability in this group, it is proposed that all previous type fixations for *Boccardia proboscidea* Hartman, 1940 be set aside and a neotype for this species be designated from USNM 20217 under Article 75.5 of the Code. One of us (V.I.R.) has examined twelve original specimens in USNM 20217 marked by Hartman (1940) as a ‘holotype lot’. We suggest a neotype to be designated from this sample and the registration number USNM 20217 to be reserved for it. The neotype will be housed in the Smithsonian Institution in Washington, DC under USNM 20217, while the remaining specimens in Hartman’s ‘holotype lot’ will be re-numbered.

8. Since Treadwell’s (1914) description, *Polydora californica* has been mentioned by Hartman (1936, p. 32, incorrectly as a synonym of *Boccardia natrix* (Söderström,

1920); 1956, p. 257, and 1959, p. 383, both referred to *Boccardia* sp.), Uschakov (1950, 1953, 1955, 1959), and Kussakin (1975, p. 61, 1977, p. 253). Uschakov's material (cited by Kussakin, 1975, 1977) was examined and is being referred to a new *Boccardia* species (Radashevsky, in preparation). Thus, the species name has not been in wide use and, when used, was applied incorrectly.

9. *Boccardia* specimens matching Treadwell's (1914) and Hartman's (1940) descriptions are very common along the Pacific side of North America from British Columbia south to California, and also in Japan, Korea, China, Australia, Tasmania and New Zealand, and all were referred to as *B. proboscidea* (Hartman, 1941, 1954; Hartman & Reish, 1950; Berkeley & Berkeley, 1950, 1952; Woodwick, 1963, 1977; Imajima & Hartman, 1964; Paik, 1975; Blake & Kudenov, 1978, 1981; Light, 1978; Kudenov, 1979; Hobson & Banse, 1981; Dorsey, 1982; Hartmann-Schröder, 1982, 1989; Hutchings & Turvey, 1984; Yang & Sun, 1988; Sun, 1994; Petch, 1995; Sato-Okoshi & Okoshi, 1997; Sato-Okoshi, 2000; Leonart, 2001; Gibson & Smith, 2004; Read, 2004; Sato-Okoshi et al., 2008). Numerous other literature sources such as environmental monitoring reports have also used this name. It is considered to be an introduced species in Australia (Pollard, 1990; Jones, 1991; Sliwa et al., 2009). During the last decade it was reported as an introduced species in Hawaii (Bailey-Brock, 2000), and South Africa (Simon & Booth, 2007; Simon et al., 2009, 2010), and also suggested to be invasive in the Bay of Biscay, northern Spain (Martínez et al., 2006), England and Argentina (Radashevsky, in preparation). *Boccardia proboscidea* was redescribed by Petch (1995) and Gibson et al. (1999). It has become the subject of numerous investigations due to its importance as an abundant intertidal inhabitant and also as a borer in shells of commercially important molluscs (Simon et al., 2009, 2010).

10. Hartman (1940) treated *Polydora californica* Treadwell, 1914 as a homonym of *Spio californica* Fewkes, 1889, which she believed was a polydorin species. On the other hand, Hartman (1940) repeatedly stated that Fewkes's species could not be placed into any genus and even doubted its family identity. Consequently, Hartman's (1940) homonymy statement about *Polydora californica* is uncertain and cannot be considered valid. Maintaining the name *Spio californica* would threaten stability and cause confusion because it is not unambiguously defined by the original description or any extant type material, has been applied incorrectly in the past and is still available with potential to confuse. It is proposed that this name be suppressed under Article 81.1 of the Code.

11. We have examined specimens on which Treadwell (1914) and Hartman (1940) based the description of *P. californica* and *B. proboscidea* respectively, and found them to be the same species, as did Petch (1995). Following the Principle of Priority the name *Boccardia proboscidea* Hartman, 1940 would have to be treated as a junior subjective synonym of *Polydora californica* Treadwell, 1914. This procedure would cause considerable confusion because the name *B. proboscidea* has been cited in numerous publications, and the name *Polydora californica*, while used several times, was applied incorrectly.

12. We urge that the specific name *Boccardia proboscidea* be conserved for one of Hartman's (1940) specimens under Article 23.9.3 of the Code, defined by the neotype as proposed in (7) above. Approval of this proposal will maintain the name in its accustomed usage.

13. The International Commission on Zoological Nomenclature is accordingly asked:

(1) to use its plenary power:

- (a) to rule that the name *proboscidea* Hartman, 1940, as published in the binomen *Boccardia proboscidea*, be given precedence over *californica* Treadwell, 1914, as published in the binomen *Polydora californica*, whenever the two are considered to be synonyms;
- (b) to set aside all previous type fixations for *proboscidea* Hartman, 1940, as published in the binomen *Boccardia proboscidea*, and designate as neotype one specimen from USNM 20217 under the same registration number;
- (c) to suppress the name *californica* Fewkes, 1889, as published in the binomen *Spio californica*, for the purposes of the Principle of Priority but not for those of the Principle of Homonymy;

(2) to place on the Official List of Specific Names in Zoology the following names:

- (a) *proboscidea* Hartman, 1940, as published in the binomen *Boccardia proboscidea* and as defined by neotype USNM 20217, with the endorsement that it is to be given precedence over *californica* Treadwell, 1914, as published in the binomen *Polydora californica*, whenever the two are considered to be synonyms;
- (b) *californica* Treadwell, 1914, as published in the binomen *Polydora californica*, with the endorsement that it is not to be given priority over *proboscidea* Hartman, 1940, as published in the binomen *Boccardia proboscidea* and as defined by neotype USNM 20217, whenever the two are considered to be synonyms;

(3) to place on the Official Index of Rejected and Invalid Specific Names in Zoology the name *californica* Fewkes, 1889, as published in the binomen *Spio californica* and as suppressed in (1c) above.

Acknowledgments

Our sincere thanks to Kristian Fauchald, James A. Blake and Geoffrey B. Read for reviewing our manuscript and their stimulating discussions. We are indebted to Eric Lazo-Wasem (*Peabody Museum of Natural History, Yale University*), Adam Baldinger (*Museum of Comparative Zoology, Harvard University*), and Mark Siddall & Sarfraz Lodhi (*American Museum of Natural History*), who kindly checked for the presence of Fewkes's material in their museums. Adam Baldinger also checked MCZ's Special Collections & Archives for documentation relating to Fewkes. Financial support for VIR was provided by the Russian Foundation for Basic Research (RFBR Project 09-04-01235); Far East Branch of the Russian Academy of Sciences (FEB RAS Project 09-III-A-06-209), and the Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES), Ministério da Educação do Brasil, through the Universidade Federal do Rio de Janeiro, Rio de Janeiro (Professor Visitante Estrangeiro, CGCI 014/2008).

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Acknowledgement of receipt of this application was published in BZN **67**: 2.

Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to the Executive Secretary, I.C.Z.N., c/o Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).

Case 3522

PALICINAE Burr, 1910 (Dermaptera, SPONGIPHORIDAE): proposed emendation of the current spelling to PALEXINAE to remove homonymy with PALICIDAE Bouvier, 1898 (Crustacea, Decapoda)

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Abstract. The purpose of this application, under Articles 29 and 55 of the Code, is to remove the homonymy between the earwig family-group name PALICINAE Burr, 1910 (Dermaptera, SPONGIPHORIDAE) and the crustacean family-group name PALICIDAE Bouvier, 1898 (Crustacea, Decapoda, Brachyura). It is proposed that the spelling of the family-group name PALICINAE (based on the generic name *Palex* Burr, 1910) be emended to give PALEXINAE, while leaving the crustacean name PALICIDAE (based on the type genus name *Palicus* Philippi, 1838) unaltered.

Keywords. Nomenclature; taxonomy; Dermaptera; Decapoda; Brachyura; SPONGIPHORIDAE; PALICIDAE; PALICINAE; Australasia.

1. The genus *Platylabia* was established by Dohrn (1867, p. 347) based on the description of four species: *Platylabia major* Dohrn, 1867, *Platylabia thoracica* Dohrn, 1867, the latter currently included in the genus *Chaetospania* Karsch, 1886, and the two species *Platylabia dimidiata* Dohrn, 1867 and *Platylabia guineensis* Dohrn, 1867, both synonymised with *Paralabella curvicauda* (Motchulsky, 1863) by Burr (1911, p. 56). Subsequently a further two species were described in the genus *Platylabia*: Dubrony (1879, p. 372) described *Platylabia gestroi*, currently included in the genus *Chaetospania* Karsch, 1886 (Srivastava, 1985, p. 222), and De Bormans (1900, p. 459) described *Platylabia sparattoides*.

2. Later, Burr (1910, p. 68) described the new monotypic genus *Palex* for the species *Platylabia sparattoides* (originally fixed as the type species by monotypy), and the new subfamily PALICINAE Burr, 1910 with *Palex* designated as the type genus. One year later, Burr (1911, p. 43) considered *Palex sparattoides* Burr, 1910 to be synonymous with *Platylabia major* Dohrn, 1867, and accordingly he synonymised the genus *Palex* Burr, 1910 with the genus *Platylabia* Dohrn, 1867, and proposed a new monotypic subfamily PLATYLABIINAE for the genus *Platylabia*. The subfamily name PLATYLABIINAE Burr, 1911 has been used for a long time (e.g. Popham & Brindle, 1966; Srivastava, 1981; Steinmann, 1989a, b), although, according to the Principle of Priority (Article 23.1 of the Code), PLATYLABIINAE Burr, 1911 is a junior synonym of PALICINAE Burr, 1910, as recently pointed out by Engel & Haas (2007, p. 10); thus, PALICINAE is the valid name under Article 23.1 of the Code. However, according to Article 29.1, PALICINAE has the same grammatical stem (*Palic-*) as the crustacean family name PALICIDAE Bouvier, 1898 (based on the type genus *Palicus* Philippi, 1838; Brachyura). Therefore, PALICINAE (Dermaptera, SPONGIPHORIDAE) and PALICIDAE (CRUSTACEA, DECAPODA) are homonyms in the family-group category (Article 55.3 of the Code) and the case should

be referred to the Commission for a ruling to remove homonymy. It is proposed that the dermapteran family-group name PALICINAE be emended to PALEXINAE (as the stem of the generic name is *Palex*-), leaving the crustacean name PALICIDAE unaltered.

3. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to rule that for the purposes of Article 29 of the Code the stem of the generic name *Palex* Burr, 1910 is *Palex*-;
- (2) to place on the Official List of Family-Group Names in Zoology the following names:
 - (a) PALEXINAE Burr, 1910, type genus *Palex* Burr, 1910, spelling emended by the ruling in (1) above;
 - (b) PALICIDAE Bouvier, 1898, type genus *Palicus* Philippi, 1838 (Crustacea, Decapoda);
- (3) to place on the Official Index of Rejected and Invalid Family-Group Names in Zoology the name PALICINAE Burr, 1910, spelling emended to PALEXINAE, as ruled in (1) above (Dermaptera, SPONGIPHORIDAE).

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Acknowledgement of receipt of this application was published in BZN **67**: 119.

Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to the Executive Secretary, I.C.Z.N., c/o Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).

Case 3523***Callidea lateralis* Guérin-Méneville, 1838 (currently *Lamprocoris lateralis*; Insecta, Heteroptera): proposed conservation of the specific name**

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Abstract. The purpose of this application, under Article 23.9.3 of the Code, is to conserve the widely used specific name *Lamprocoris lateralis* (Guérin-Méneville, 1838) for a species of jewel bug from Java by suppressing its objective senior synonym *Lamprocoris obtusus* (Westwood, 1837). The senior name *L. obtusus* has never been positively treated as different from *L. lateralis* but has been neglected in the literature, thereby justifying conservation of *Lamprocoris lateralis*.

Keywords. Nomenclature; taxonomy; Heteroptera; SCUTELLERIDAE; *Lamprocoris*; *Lamprocoris lateralis*; *Lamprocoris obtusus*; jewel bug; Java.

1. Westwood (1837, p. 16) described a new species of jewel bug, *Callidea obtusa* (Insecta, Heteroptera, SCUTELLERIDAE) from Java. This species was transferred to *Lamprocoris* Stål, 1865 by Stål (1873, p. 22).

2. Guérin-Méneville (1838, pp. 159, 160) described a new species, *Scutellera lateralis* from Java. This species was fixed as the type species of the genus *Lamprocoris* by subsequent monotypy by Stål (1866, p. 155).

3. Westwood's original description of *Callidea obtusa* is brief and inadequate. The type material has not been re-examined since its original description, therefore this species remained as of doubtful identity until recently. No authors have ever presented original data on this species, and there are only a few subsequent papers mentioning it, as follows. In their comprehensive works, Germar (1839, p. 119) and Atkinson (1887, p. 183) repeated Westwood's original description without any comment. Also without having seen any specimens, Vollenhoven (1863, p. 32) and Walker (1868, p. 510) considered that it was most probably only a variety of (i.e. conspecific with) *Callidea lateralis*. The survey of the pentatomoid species deposited in the Hope Collections at Oxford compiled by Distant (1900, p. 820) as well as the catalogues by Stål (1873, p. 22), Lethierry & Severin (1893, p. 28), Schouteden (1904, p. 28) and Kirkaldy (1909, p. 301) listed the species under *Lamprocoris* without comment. Finally, Tsai & Rédei (2009, p. 46) treated it as a species of doubtful identity, and mentioned that it was almost certainly conspecific with *L. lateralis*.

4. Guérin-Méneville's original description of *L. lateralis* is detailed, therefore subsequent authors readily recognised it during the last 170 years. We could trace 33 papers mentioning it in the immediately preceding 50 years. These works include identification books and taxonomical papers (Hsiao & Zheng, 1977, p. 62; Tsai & Rédei, 2009, p. 45), morphological studies (Kumar, 1965, pp. 45, 52; Fischer, 2001, plate 13; Tsai et al., 2004, p. 795); catalogues and checklists (Stichel, 1961, p. 730; Stichel, 1962, p. 210; Hua, 2000, p. 168; Göllner-Scheiding, 2006, p. 197), faunistic papers and zoogeographical analyses (Yang & Wu, 1981, p. 70; Zhang et al., 1983, p. 48; 1987, p. 118; Wu, 1984, p. 29; 1994, p. 63; Chen et al., 1985, p. 45; Jiang, 1985, p. 56; Zhang, 1986, p. 426; Zhang & Lin, 1988a, p. 84; 1988b, p. 75; Li et al., 1988, p. 138; Li et al., 1989, p. 38; Zheng & Jin, 1990, p. 141; Lin & Zhang, 1993, p. 113; Su et al., 1993, p. 281; Lin et al., 1999, p. 45; Liu & Wang, 2004, p. 174), and ecological studies (Hu, 1988, p. 195). The species is a minor pest of the oil-seed camellia, *Camellia oleifera* Abel and other *Camellia* spp. (THEACEAE) in China, and several authors referred to it in this context (Yang, 1962, p. 34; Qi et al., 1993, p. 18; Dai, 1997, p. 35; Zhang & Han, 1999, p. 85). The species is included even in popular field guides on insects, first of all targeting the public (Zhang, 2001, p. 72; Ho, 2003, p. 206). Several of the above papers provide redescriptions (Yang, 1962; Hsiao & Zheng, 1977; Lin & Zhang, 1993; Lin et al., 1999), habitus illustrations (Yang, 1962; Hsiao & Zheng, 1977; Lin & Zhang, 1993) and other drawings, photos of the adult (Hsiao & Zheng, 1977; Zhang, 2001; Ho, 2003; Tsai & Rédei, 2009) and immatures (Ho, 2003), and genitalia illustrations (Kumar, 1965; Fischer, 2001) of this biological species under the name *L. lateralis*. The species is widely distributed all over the continental South and Southeast Asia and the Malay Archipelago.

5. A lectotype has been designated for *L. obtusus* by Tsai & Rédei (2010, p. 42). It is a female deposited at the Hope Entomology Collections, Oxford University Museum, Oxford, Great Britain, bearing the following labels: 'Type' [circle with red margin, printed]; 'Java' [handwritten]; 'obtusa Hope' [handwritten, folded]; 'Lamprocoris \ obtusa \ Westw.' [handwritten]; 'TYPE. \ = = \ WESTW. (HOPE) \ C. Hemipt. 1837 \ Part I, page 16. \ Distant, P.Z.S. \ 1900, p. 807–825.' [with red frame, printed + handwritten]; 'TYPE HEM.: No 25 \ CALLIDEA \ OBTUSA \ WESTWOOD \ HOPE DEPT. OXFORD' [with black frame, handwritten + printed].

6. *Lamprocoris lateralis* was described from several specimens (cf. Guérin-Méneville, 1838, pp. 160–161). Together with other types of Guérin-Méneville described in the same work, the syntypes are supposed to be deposited in the Muséum National d'Histoire Naturelle, Paris, France (cf. Göllner-Scheiding, 2006, p. 197). Unfortunately, no specimens could be found there. In accordance with the original description and subsequent works, we recognise it as representing the same biological species as the lectotype of *L. obtusus*. The lectotype of *L. obtusus* Westwood, 1837 has therefore been designated as the neotype of *L. lateralis* Guérin-Méneville, 1838 (Tsai & Rédei, 2010, p. 43). Hence, *L. lateralis* (Guérin-Méneville, 1838) is a junior objective synonym of *L. obtusus* (Westwood, 1837).

7. The senior name *L. obtusus* was greatly overlooked by subsequent authors and has never been positively treated as different from *L. lateralis*. On the other hand, there is extensive and substantial literature on this biological species under the junior name *L. lateralis*. This species is of economic importance, and it is rather common in

several parts of Southeast Asia. As a consequence, it appears in the agricultural literature and even in popular books on insects, i.e. references primarily targeting non-taxonomists, and it is invariably referred to under the junior name *L. lateralis*. Because of the above circumstances, the authors' opinion is that changing the name of this species simply because of adherence to the Principle of Priority is undesirable and would threaten stability (cf. Article 23.2 of the Code). The number and authorship of the works using the junior name meet the conditions of Article 23.9.1.2, however, their distribution encompasses a span of 12 years (between 1965 and 1977), and consequently the 'automatic' conservation of *L. lateralis* under Article 23.9.2 is not possible. Therefore, the case is brought to the Commission under the provisions of Article 23.9.3.

8. Since *L. lateralis* is a junior objective synonym of *L. obtusus*, there is no possibility that the two names may identify two different biological species, and the name *L. obtusus* cannot be needed in the future. Consequently, as using the senior name *L. obtusus* is undesirable, its suppression is considered by us as a more appropriate way to set it aside rather than giving the junior synonym *L. lateralis* nomenclatural precedence over it.

9. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to suppress the specific name *obtusa* Westwood, 1837, as published in the binomen *Callidea obtusa*, for the purposes of the Principle of Priority but not for those of the Principle of Homonymy;
- (2) to place on the Official List of Generic Names in Zoology the name *Lamprocoris* Stål, 1865 (gender: masculine), type species by subsequent monotypy by Stål (1866) *Scutellera lateralis* Guérin-Méneville, 1838;
- (3) to place on the Official List of Specific Names in Zoology the name *lateralis* Guérin-Méneville, 1838, as published in the binomen *Scutellera lateralis*, the specific name of the type species of *Lamprocoris* Stål, 1865;
- (4) to place on the Official Index of Rejected and Invalid Specific Names in Zoology the name *obtusa* Westwood, 1837, as published in the binomen *Callidea obtusa* and as suppressed in (1) above.

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Acknowledgement of receipt of this application was published in BZN **67**: 120.

Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to the Executive Secretary, I.C.Z.N., c/o Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).

Case 3519

***Eumolpus* Weber, 1801, *Chrysochus* Chevrolat in Dejean, 1836 and *Bromius* Chevrolat in Dejean, 1836 (Insecta, Coleoptera, CHRYSOMELIDAE): proposed conservation of usage**

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Abstract. The purpose of this application, under Article 81 of the Code, is to conserve the usage of the generic names *Eumolpus* Weber, 1801, *Chrysochus* Chevrolat in Dejean, 1836 and *Bromius* Chevrolat in Dejean, 1836 by suppressing the name *Eumolpus* Kugelann in Illiger, 1798. *Eumolpus* Kugelann in Illiger, 1798 in its original usage included European species currently assigned to different genera, while in its modern usage *Eumolpus* includes mostly Neotropical species and is almost universally used in the sense of Weber (1801). It is proposed that the original usage of the name *Eumolpus* by Kugelann in Illiger (1798) and all usages of the name before that by Weber (1801) be suppressed. The name *Eumolpus* subsequently used by Weber (1801) will then become a name in its own right taking Weber's authorship thereby maintaining stability and eliminating confusion caused by potential use of *Eumolpus* Kugelann in Illiger, 1798.

Keywords. Nomenclature; taxonomy; Coleoptera; CHRYSOMELIDAE; EUMOLPINAE; *Eumolpus*; *Chrysochus*; *Bromius*; *Eumolpus ignitus*; *Bromius obscurus*; *Chrysomela praetiosa*; *Chrysochus asclepiadeus*; leaf beetle.

1. The name *Eumolpus* was established by Kugelann in Illiger (1798, p. 498) to accommodate the leaf-beetle species *Chrysomela obscura* Linnaeus, 1758 (p. 375, currently *Bromius obscurus*), *Cryptocephalus vitis* Fabricius, 1775 (p. 108, currently a junior synonym of the previous species) and *Chrysomela praetiosa* Fabricius, 1792 (p. 324, a junior synonym of *Chrysomela asclepiadea* Pallas, 1773, currently assigned to *Chrysochus* or *Eumolpus*), followed by 'etc.' suggesting knowledge of additional taxa.

2. Weber (1801, p. 28) attributed the authorship of *Eumolpus* to Kugelann and described *E. fulgidus* (p. 52), a new species from Brazil, on the same page comparing

it with '*E. ignitus*', which can be interpreted as transferring the South American *Chrysomela ignita* Fabricius, 1787 (p. 68) to the genus *Eumolpus* Kugelann.

3. Fabricius (1801, pp. 418–423) listed under *Eumolpus* 26 species including *Chrysomela ignita*, *C. obscura*, *C. praetiosa* (spelled as '*C. pretiosa*') and *Cryptocephalus vitis*, but gave no reference to Kugelann or Illiger. However, on page ix he cites Illiger, hence it is assumed that he redescribed the taxon, and not described it as new, as in many other cases, e.g. *Coccinella*, *Chrysomela*, etc. In the text he gave names of authors only to the specific names. The preface of Weber's work is dated August 1800, but the publication was issued 'ante March 1801' according to Evenhuis (1997, p. 809), while the preface of Fabricius's (1801, p. x) work says '10 April, 1801'. The priority of Weber (1801) over Fabricius (1801) was established by Chapin (1946) and upheld by Evenhuis (1997, p. 809), Zidek & Pokorný (2005), the Commission (BZN 62: 124, June 2005), and Branco (2007, p. 7).

4. Latreille (1810, p. 432) designated *Cryptocephalus vitis* Fabricius, 1775 as the type species of the genus *Eumolpus* (without attributing the genus to any author). This fact was overlooked by most workers. Only Redtenbacher (1858, p. 893, and 1874, p. 453), who attributed *Eumolpus* to Fabricius, supported a generic concept consistent with Latreille's type species designation.

5. Chevrolat in Dejean (1836, p. 413) listed only South and Central American species in *Eumolpus*, which he assigned to Kugelann, most of which had been included in this genus by Fabricius (1801). We accept the authorship as 'Chevrolat in Dejean' because of Dejean's (1836, p. xij) statement in the third edition of his 'Catalogue. . .': 'Quant aux chrysomélines et à la section des trimères, M. Chevrolat s'en étant particulièrement occupé, je l'ai prié de vouloir bien m'aider de ses conseils, et j'ai adopté tous les genres qu'il a créés aux dépens des anciens grands genres *hispa*, *cassida* . . . *eumolpus*, . . . Je le prie de recevoir mes remerciements pour la part qu'il a bien voulu prendre à la rédaction de ce Catalogue' (As for the section chrysomelines and trimers, M. Chevrolat has particularly occupied himself with them, I asked him to kindly help me with his advice, and I have adopted all the genera which he has created from the old big genera *Hispa*, *Cassida* . . . *Eumolpus* . . . I hereby thank him for the part he was willing to take in the writing of this Catalogue). This genus mostly includes New World species, and none of the originally included species are currently assigned to it. The Old World and North American species that had been previously assigned to *Eumolpus* were placed in a number of genera, including *Chrysochus* Chevrolat in Dejean, 1836, p. 413 (often attributed to Redtenbacher (1845, p. 117, or 1849, p. 558), e.g. Chapuis, 1874; Harold, 1874; Lefèvre, 1885; Clavareau, 1914), and *Bromius* Chevrolat in Dejean, 1836, p. 412. Jacoby (1908, p. 507) designated *Chrysomela praetiosa* Fabricius, 1792, a subjective junior synonym of *Chrysomela asclepiadea* Pallas, 1773 (p. 725), as the type species of *Chrysochus*. As type species of *Bromius* and of its subjective junior synonym *Adoxus* Kirby, 1837 were designated *Chrysomela obscura* Linnaeus, 1758 (p. 375) (Monrós & Bechyné, 1956, p. 1127) and *Cryptocephalus vitis* Fabricius, 1775 (p. 108) (Kirby, 1837, p. 209), respectively. Subsequently, Hope (1840, p. 162) designated *Chrysomela ignita* Fabricius, 1787 (p. 68) as the type species of *Eumolpus* Fabricius, 1801 (as this species was included in *Eumolpus* by Weber, 1801, this type species fixation relates also to *Eumolpus* Weber, according to Article 67.7 of Code). On the other hand, Redtenbacher (1858, 1874) considered *Eumolpus* Fabricius, 1801 as a senior synonym of *Bromius* and

Jacquelin du Val (1868, p. 221) considered *Eumolpus* Fabricius, 1801 as a senior synonym of *Chrysochus*. As *Cryptocephalus vitis* Fabricius, 1775 is a subjective junior synonym of *Chrysomela obscura* Linnaeus, 1758, none of the species included by Kugelann in *Eumolpus* have remained placed in that genus (see Harold, 1874, p. 3385; Chapuis, 1874, p. 300; Lefèvre, 1885, p. 100; Clavareau, 1914, p. 98). Nevertheless, the name *Eumolpus* has continuously been used as valid for a genus containing a number of neotropical species.

6. Subsequent authors, until 1993, used *Eumolpus* for Neotropical taxa, but *Chrysochus* and *Adoxus* or *Bromius* for Holarctic taxa (Jacoby, 1908; Weise, 1921; Chen, 1935, 1940; Chûjô, 1936, 1938, 1942; Pic, 1927, 1928, 1934; De Monte, 1948; Papp, 1951; Bechyné, 1953; Costa Lima, 1955; Špringlová, 1960; Gressitt & Kimoto, 1961; Kimoto & Gressitt, 1966, 1982; Seeno & Wilcox, 1982; Medvedev & Shapiro, 1965; Medvedev, 1979, 1992; Lopatin, 1977, 1986, etc.), and were not consistent only in the use of *Adoxus* or *Bromius* as valid. At present, *Bromius* is considered to be valid.

7. Warchałowski (1993, p. 21) followed Jacquelin du Val (1868) and used the name *Eumolpus* (attributed to Illiger, 1798), associated with the species epithet *asclepiadeus* (Pallas, 1776 [sic]). He also cited *E. praetiosus* (credited to 'Schneider, 1791') as the type species of *Eumolpus*, and stated that the species included in *Chrysochus* must be transferred to *Eumolpus*.

8. Some European authors followed Warchałowski (1993) using the binomen *Eumolpus asclepiadeus* (e.g. Vig, 1997; Bieńkowski, 1999, 2004; Warchałowski, 2003; Gruev, 2004), while others (e.g. Kimoto & Takizawa, 1994, 1997; Peterson et al., 2001; Tan et al., 2005) continued to use *Chrysochus* as valid. Occasionally, *asclepiadeus* was placed in *Chrysochus* (e.g. Aslan et al., 1996; Dobler et al., 1998). Lopatin et al. (2004) used *Eumolpus* as valid for all involved northern Palaearctic species. The confusion did not affect the Neotropical species that were consistently placed in *Eumolpus* (Riley et al., 2002; Fontes et al., 2004; Farrell & Sequeira, 2004; Jiménez & Maes, 2009).

9. Warchałowski's (1993) designation of *Chrysomela praetiosa* as the type species of *Eumolpus* Kugelann in Illiger, 1798 is invalid, and Latreille's (1810) earlier, valid designation of *Eumolpus vitis* as its type species, places *Eumolpus* and *Bromius* in synonymy. This fact threatens stability in use of the genus-group names *Eumolpus*, *Bromius* and *Chrysochus*.

10. *Eumolpus*, *Bromius* and *Chrysochus* include well-known, widely distributed species referred to in a very large number of publications. Members of *Chrysochus* feeding on ASCLEPIADACEAE are used as biocontrol agents of invasive weeds in U.S.A. (Van Driesche et al., 2002). The Holarctic *Bromius obscurus* is particularly often cited in faunistic, morphological, and physiological publications. Neotropical species of *Eumolpus* are amongst the largest chrysomelids and are well represented in collections since the 18th century while the genus *Eumolpus* is the type genus of the subfamily EUMOLPINAE. It is proposed that the original usage of the name *Eumolpus* by Kugelann in Illiger be suppressed under Article 81 of the Code. The name *Eumolpus* by Weber (1801) will then become a name in its own right taking Weber's authorship, with the type species *Chrysomela ignita* Fabricius, 1787.

11. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power:
 - (a) to suppress the name *Eumolpus* Kugelann in Illiger, 1798 and all the uses of the name prior to that by Weber (1801) for the purposes of the Principle of Priority, but not for those of the Principle of Homonymy;
 - (b) to set aside all type species fixations for the genus *Eumolpus* Weber, 1801 prior to that of *Chrysomela ignita* Fabricius, 1787 by Hope (1840).
- (2) to place on the Official List of Generic Names in Zoology the following names:
 - (a) *Eumolpus* Weber, 1801 (gender: masculine), type species *Chrysomela ignita* Fabricius, 1787 by subsequent designation by Hope (1840);
 - (b) *Chrysochus* Chevrolat in Dejean, 1836 (gender: masculine), type species *Chrysomela praetiosa* Fabricius, 1792 (a junior synonym of *Chrysomela asclepiadea* Pallas, 1773) by subsequent designation by Jacoby (1908);
 - (c) *Bromius* Chevrolat in Dejean, 1836 (gender: masculine), type species *Chrysomela obscura* Linnaeus, 1758 by subsequent designation by Monros & Bechyné (1956);
- (3) to place on the Official List of Specific Names in Zoology the following names:
 - (a) *ignita* Fabricius, 1787, as published in the binomen *Chrysomela ignita* (specific name of the type species of *Eumolpus* Weber, 1801);
 - (b) *asclepiadeus* Pallas, 1773, as published in the binomen *Chrysomela asclepiadea* (the valid specific name of the type species of *Chrysochus* Chevrolat in Dejean, 1836);
 - (c) *obscura* Linnaeus, 1758, as published in the binomen *Chrysomela obscura* (specific name of the type species of *Bromius* Chevrolat in Dejean, 1836);
- (4) to place on the Official Index of Rejected and Invalid Generic Names in Zoology the name *Eumolpus* Kugelann in Illiger, 1798.

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Acknowledgement of receipt of this application was published in BZN **67**: 2

Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to the Executive Secretary, I.C.Z.N., c/o Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).

Case 3524

***Thecla dumetorum* Boisduval, 1852 (currently *Callophrys dumetorum*): proposed neotype; and *Thecla sheridonii* Edwards, 1877 (currently *C. sheridanii*) (Lepidoptera, LYCAENIDAE): proposed conservation**

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Abstract. The purpose of this case, under Articles 75.5 and 81.2.3 of the Code, is to eliminate current nomenclatural confusion within the butterfly genus *Callophrys* Billberg, 1820. Differing identifications of the lectotype of *Callophrys dumetorum* Boisduval, 1852 have changed the usages of *C. dumetorum*, *C. viridis* Edwards, 1862 and *C. perplexa* Barnes & Benjamin, 1923. A neotype of *Callophrys dumetorum* is proposed to restore these names to their previous stable usages. Moreover, the recently suggested conspecificity of *C. viridis* and *C. sheridanii* Edwards, 1877 will

frequently synonymise *sheridanii*, a widespread, common and well known species, so it is also proposed that the widely used name *sheridanii* be given precedence over *viridis* whenever the two are considered to be synonyms.

Keywords. Nomenclature; taxonomy; Insecta; Lepidoptera; LYCAENIDAE; *Thecla*; *Callophrys*; *Callophrys dumetorum*; *Callophrys perplexa*; *Thecla sheridonii*; *Callophrys sheridanii*; *Callophrys viridis*; green hairstreaks; California.

1. This case involves several species of small butterflies found in western North America (called ‘Green Hairstreaks’ because their wings are green ventrally) that were originally described in the genus *Thecla* Fabricius, 1807, and are now placed in *Callophrys* Billberg, 1820.

2. *Thecla dumetorum* Boisduval, 1852 (p. 291, number 22) was described from ‘Californie’. Until 1923 (Barnes & Benjamin, 1923, p. 65) the name was generally applied to all California *Callophrys* that later proved to belong to several species.

3. *Thecla viridis* Edwards, 1862 (pp. 221, 223, number 4) was described from ‘California’. It was considered synonymous with *dumetorum* (Scudder, 1876 (p. 105); Strecker, 1878; Haskin & Grinnell, 1912; Barnes & McDunnough, 1917 (p. 15); Barnes & Benjamin, 1926, p. 18), even by the author of *viridis* at a later time (see Brown, 1970, pp. 61–77). Clench (1944, pp. 221–227) resurrected *viridis* from synonymy and treated it as a separate species occupying coastal California, as detailed below in para. 6.

4. *Thecla sheridonii* Edwards in Carpenter, 1877 (p. 48) was described from the ‘Big Horn Mountains, Wyoming’. Edwards (1884, p. 299) emended the specific name to *sheridanii* because Carpenter’s preamble to the original description noted that the honoree was Lieutenant General P.H. Sheridan, and the printer misread Edwards’ handwriting of *sheridanii* (Brown, 1970, pp. 62–63) (Article 32.5.1 of the Code). Brown (1970, pp. 61–63) designated as lectotype a female from the W.H. Edwards collection in the Carnegie Museum of Natural History (Pittsburg, Pennsylvania, U.S.A.) and restricted the type locality to the foothills west of the town of Sheridan, Wyoming (Table 1 details this lectotype and its labels). It is a typical example of *Callophrys sheridanii sheridanii* that occurs throughout the Rocky Mountains from Montana to New Mexico. The name *sheridanii* has been used continuously for the same taxon to the present time.

5. *Callophrys dumetorum perplexa* Barnes & Benjamin, 1923 (p. 65) was described from ‘San Diego, California’ as a southern Californian ‘race’, the typical subspecies *C. dumetorum dumetorum* being represented by all northern Californian *Callophrys*. Gorelick (1971) placed *perplexa* into the synonymy of *dumetorum*, but since Emmel, Emmel & Mattoon (1998a) the name *perplexa* has been applied to butterflies in most of lowland California. The taxon denoted by the name *perplexa* is unambiguous; no other *Callophrys* species occurs within 500 km of San Diego, California.

6. Clench (1944) resurrected *viridis* from the synonymy of *dumetorum*. The name *viridis* was then applied to the coastal taxon until Emmel, Emmel, & Mattoon (1998a) (Clench, 1961 (p. 210); dos Passos, 1964; Tilden, 1965 (pp. 62–65); Scott, 1975 (p. 295); Miller & Brown, 1981). Clench (1944) designated a ‘neoholotype’ of *viridis*

from San Francisco, but Brown & Clench (1969) located a syntype of *viridis*, and determined that Clench's 'neoholotype' had not been a syntype (*Thecla viridis* is listed in *Official Lists and Indexes*, Opinion 953, BZN 28: 22–23, August 1971). Therefore Brown & Clench (in Brown 1970, pp. 65–67) designated as lectotype a syntype male of *viridis* from the W.H. Edwards collection in the Carnegie Museum (Table 1 details the lectotype and its labels). The name *viridis* clearly applies only to this taxon. This lectotype belongs to the coastal *Eriogonum*-feeding taxon, and its thin, soft, tinned brass pin was the kind used by H.H. Behr (Brown, 1970), who was stated to be the collector in Edwards' original description. Behr studied San Francisco butterflies while residing there (Emmel, Emmel & Mattoon, 1998b), thus the restriction of type locality to San Francisco by Clench (1944) seems correct and has never been disputed, and the original description of *viridis* is consistent with the coastal *Eriogonum*-feeding taxon.

7. Scott (1986, pp. 376–379) considered *viridis* synonymous with *dumetorum*, based on unpublished information from John F. Emmel (pers. comm.). Other lepidopterists ignored this synonymy, until Emmel, Emmel & Mattoon (1998a, p. 11, figs. 30–32) formally synonymised *viridis* under *dumetorum* and designated a female labelled 'Calif' from the J.B.A. de Boisduval collection in the National Museum of Natural History, Smithsonian Institution (Washington D.C., U.S.A.) as the lectotype for *dumetorum* (Table 1 details this lectotype and its labels). They stated that the type locality was 'Here restricted to San Francisco, California', and suggested the lectotype to be a well-marked specimen of the San Francisco taxon and noted that it resembled a published lithograph of *dumetorum* by Charles Oberthür (1913), who acquired Boisduval's collection. This action by Emmel, Emmel & Mattoon (1998a) shifted the species concept of *dumetorum* to the coastal California butterfly, rather than the inland species. This action changed the long-term historical usage of *dumetorum* for a widespread inland species to that of a coastal endemic, thereby eliminating the long-term usage of *viridis* for the coastal endemic. As a result of this action the name *perplexa* was applied to the taxon occurring across most of inland California. Currently, *viridis* is treated as a synonym of *dumetorum* (Pyle, 2002, p. 204; Pelham, 2008, pp. 196–197) or as a subspecies of *Callophrys sheridanii* (by Scott, 2008, p. 35, who recognised that *viridis* has priority over *sheridanii* but did not use the name *viridis* for the species' name pending this petition).

8. However, the identification of the lectotype of *dumetorum* by Emmel, Emmel & Mattoon (1998a) as conspecific with the nominal species *viridis* is doubtful, as we think it is more likely conspecific with *perplexa*. To more fully understand its status, we re-examined the lectotype of *dumetorum*. The figures of this specimen in Emmel, Emmel & Mattoon (1998a, figs. 30–31) are grossly overexposed, changing the green colours to yellow and obscuring most details. High-resolution images of the lectotype were obtained from Robert K. Robbins and Brian Harris of the Smithsonian Institution, who confirmed that the colours of the new images accurately depict the specimen. Table 1 details this lectotype and its labels. Pinned beneath the lectotype is also a dorsal figure of *dumetorum* (which is an accurate depiction of this specimen), clipped from an uncoloured Plate 236 of Oberthür (1913). Based on these photos, the lectotype of *dumetorum* possesses all the characteristics described by Boisduval (1852), and appears to be the same female illustrated as *dumetorum* by Oberthür (1913), as also noted by Tilden (1963, pp. 292–298) and Emmel, Emmel & Mattoon

Table 1. Details of the name-bearing types of *Callophrys dumetorum*, *C. viridis* and *C. sheridanii*.

Original name and type specimen	<i>Thecla dumetorum</i> Boisduval, 1852 lectotype	<i>Thecla viridis</i> W. H. Edwards, 1862 lectotype	<i>Thecla sheridanii</i> W.H. Edwards, 1877 lectotype
Sex	female	male	female
Publication designating lectotype, and published illustration	Emmel, Emmel & Mattoon (1998a, p. 11; figs. 30–31 of upperside and underside are grossly overexposed, so details are obscure; fig. 32 shows labels)	Brown (1970, pp. 65–67, where Brown & Clench designated lectotype; p. 66 has black & white photos of upperside & underside)	Brown (1970, pp. 61–63; p. 62 has black & white photos of upperside & underside)
Prior invalid designation of lectotype or neotype	Bálint & Nguyen (2006) and W.D. Field (in Tilden, 1963, p. 282) concluded that Oberthür (1913) previously designated this same female specimen of <i>dumetorum</i> as lectotype in 1913. Oberthür (1913) published lithographs of specimens that he believed were used by Boisduval to describe each species, ‘specimina typica’. Additionally, Oberthür evidently considered only the female lectotype to be type, because the male paralectotype mentioned by Emmel, Emmel & Mattoon (1998a) lacks the word ‘Type’ on a label equivalent to label #4 (see this Table 1 below) affixed to the female lectotype. However, ‘specimina typica’ was used frequently during the 1800s to mean ‘typical specimen’, which is not equivalent to the term ‘the type’ which is an acceptable substitute for ‘lectotype’ (Article 74.5). Moreover, Oberthür did not individually identify each figured specimen as ‘the type’ (Article 74.3). He also figured as ‘specimina typica’ both male and female of many species, thus neither of the pair can be considered as a lectotype. Oberthür’s (1913) figures thus do not fulfil requirements for valid lectotype designation	Clench (1944) designated a ‘neoholotype’ of <i>viridis</i> from San Francisco, but Brown & Clench (1969) found a <i>viridis</i> syntype and proved that Clench’s invalid neoholotype is not a syntype (<i>Thecla viridis</i> is listed in Official Lists and Indexes, 1915–1987). Then Brown & Clench (in Brown, 1970) designated the lectotype	none
Repository	Entomology Department, National Museum of Natural History, Smithsonian Institution, Washington D.C., U.S.A.	W.H. Edwards collection in Carnegie Museum of Natural History, Pittsburg, Pennsylvania, U.S.A.	W.H. Edwards collection in Carnegie Museum of Natural History, Pittsburg, Pennsylvania, U.S.A.
Type locality in original publication	‘Californie’ (implied from the title of the publication)	‘California’	Big Horn Mountains, Wyoming
Later restriction of type locality	San Francisco, California (Emmel, Emmel & Mattoon 1998a, p. 11) (this locality is doubtful, see text paragraph 9)	San Francisco, California (Clench 1944, p. 227)	foothills of Big Horn Mts. west of Sheridan (town), Wyoming (Brown, 1970, p. 63)

Table 1. —continued

Labels placed on pin of specimen (style of writing or printing is subsequently noted in parentheses: ‘printed’ = machine printed; ‘hand-printed’ = printed by hand; ‘cursive’ = handwriting in which each letter flows into the next)	(1) ‘LECTOTYPE <i>Thecla dumetorum</i> Boisduval Designated by Emmel, Emmel & Mattoon, 1998’ (printed on red-pink paper); (2) ‘Dumetorum Calif’ (cursive) which according to Emmel, Emmel & Mattoon (1998a, p. 8 & fig. 2) was written by Boisduval; (3) ‘Dumetorum. Bois Californie’ (elegant slanted hand-printed letters) (this label and similar ones on many Boisduval types are of unknown origin, but they are old and probably were prepared by an expert calligrapher employed by Charles Oberthür in the early 1900s); 4) large folded label ‘Thecla Dumetorum Boisd. Type’ (cursive), written by Rene Oberthür according to Emmel, Emmel & Mattoon (1998a, p. 8 & fig. 2); (5) ‘Type dumetorum Bdv. a/c Hofer.’ (cursive), written in 1925 by Foster Hendrickson Benjamin, the curator of William Barnes’ collection in 1922–1927, using a list of Boisduval’s types that Carl Höfer (who organized Oberthür’s collection after Oberthür’s death in 1924) had written (Scott, 2006; Calhoun, 2004) (the ‘a/c’ on the label means ‘account current’ in accounting, but in the context of biology means ‘according to’); 6) ‘EX MUSÆO D ^{ris} BOISDUVAL’ (printed) inside a red rectangle; this label and the next were evidently commercially printed for Charles Oberthür; 7) ‘Oberthur Collection’ (printed) surrounded by a red rectangle on orange-yellow paper; 8) Pinned beneath the lectotype is an accurate paper figure of this female, specifically an uncoloured (prior to hand-colouring) clipping of this female’s figure from Oberthür’s (1913) original uncoloured lithograph of the upperside of <i>dumetorum</i> . A ‘1926’ above the figured butterfly is the specimen’s printed fig. #1926 in Oberthür (1913). This clipping was placed by Oberthür himself (see <i>HESPERIIDAE</i> photos on pp. 68–70 in Emmel, Emmel & Mattoon 1998a)	1) ‘ <i>dumetorum</i> ♂ Cal ^a ’ (cursive) written by W. H. Edwards; 2) large label ‘lectotype <i>Thecla viridis</i> ♂’ (hand printed) ‘W. H. EDWARDS designated by’ (printed) ‘F.M. Brown & H.K. Clench 1967’ (hand-printed); 3) ‘Collection W.H. Edwards.’ (printed)	1) ‘Sheridani ♀ Big Horn’ (cursive) 2) ‘Collection W. H. Edwards’ (printed)
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(1998a). The lectotype photograph was carefully compared with material identified as *viridis* and *perplexa* (Table 2) and other *Callophrys* with the result that in five traits it is most like *perplexa*, and in two traits it is most like *viridis*. Our analysis suggests it is most likely to be a well-spotted specimen of the *perplexa* species, as treated by Clench (1944) and also Tilden (1963) who thoroughly discussed this specimen. However, Emmel, Emmel & Mattoon (1998a) and John Emmel (pers. comm., Dec. 2009) considered it to be a well-marked specimen of *viridis*. We consider *dumetorum* to be a nomen dubium because the lectotype cannot be identified as *dumetorum* or *viridis* with certainty. Moreover, the lectotype is missing diagnostic antennae and

Table 2. Traits of the *Callophrys dumetorum* lectotype compared to *Callophrys viridis* and *C. perplexa*. The taxa *viridis* & *perplexa* were confirmed to be separate species by Gorelick (1971), and are mostly allopatric but are sympatric on the Marina Beach Dunes in Monterey County California (John F. Emmel, pers. comm.), and starting in the mid 1900s a few specimens of *perplexa* were collected in San Francisco.

Trait	<i>viridis</i>	<i>dumetorum</i> lectotype	<i>perplexa</i>
Extent of russet or grey colour on the green ventral forewing	most have no russet colour (posterior area grey); posterior area sometimes brownish, 8 of 102 have russet area as large as lectotype*	russet area extends 2/3 of way to front margin	usually has large russet area that extends up to 4/5 of way to front margin, but several have no russet colour so the posterior area is all grey
Colour of ventral hindwing	bluish-green on 50% of adults, green (bluish-green at base) on ~50%, 3 are yellowish-olive-green	yellowish-grass-green, with bluish-green scales at base	green (usually yellowish-grass-green), with bluish-green scales at base
White spots on ventral hindwing	variable, 1 of 102 has no spots, most have 2–6, 18 of 102 have nearly complete set of 7–9 spots**	7 on hindwing (4 on forewing)	most have 1–3 spots, 14% of females at Brannan Is. have 4+ spots (Gorelick, 1971), very few have many spots***
Colour of dorsal side of wings of females	50% are slightly-brownish-grey with no orange, very many are slightly-orange brown, some are medium orange	slightly-brownish grey with no orange (the brownish tint obvious against grey background)	most are slightly- to mostly-orange, some have only a small weak orange central patch, rarely slightly-brownish grey with no orange
Wing fringes	most are whitish, some are like lectotype	dark with whitish tips (widely dark on upperside and ventral forewing)	somewhat variable, most are like lectotype, some are darker or whiter
Forewing shape on lateroposterior corner	most are perpendicular, some are obtuse	obtuse, not perpendicular	most are obtuse, few are perpendicular
Colour of antenna shaft and the base of the blackish antenna club (see Tilden, 1963, fig. 1 photos of <i>viridis</i> & <i>perplexa</i>)	most are white, making club look shorter, but ~40% (esp. on worn adults) are checkered black & white, making club look longer	club looks very long on Oberthür (1913) lithograph (antenna missing on lectotype), suggesting that antenna & base of club were chequered black & white before antenna loss	chequered black & white, making club look longer
Hostplant of larva	usually <i>Eriogonum latifolium</i> , rarely <i>Lotus scoparius</i>	?	usually <i>Lotus scoparius</i> , sometimes <i>Eriogonum</i>
Older larva	larger subdorsal ridges and stronger subdorsal stripes	?	smaller subdorsal ridges, weaker stripes
Range	sand dunes & hills on California coast from Monterey to Mendocino Counties	? (labelled only ‘Calif’)	throughout lowland California (a similar subspecies N to Washington)
Sample size	102	1	104

*20 of John F. Emmel’s 96 specimens (pers. comm.) have much russet colour, and **30 of 96 have 7–8 white spots, greater frequencies than among Scott’s 102 specimens, perhaps because most of his 96 were reared indoors (Scott’s were wild-caught), which might possibly make the adults look a bit more like the hotter-environment *perplexa* than the cool-coastal-environment *viridis*. ***Sierra Nevada adults have more spots. Tilden (1963) found some with a complete macular band and illustrated a male with 6 spots from Mariposa Co. California, while K. Davenport found numerous adults from the southwestern Sierra Nevada with many white spots.

lacks an exact locality that could have helped in its identification. Boisduval merely labelled this [lectotype] specimen of *dumetorum* 'Calif', for Californie [i.e. California]. Emmel, Emmel & Mattoon (1998a) restricted the type locality of *dumetorum* to San Francisco because they believed that the lectotype represented *viridis*. Because the lectotype more likely represents *perplexa*, it may have been collected at an inland locality. The collector of the specimen, Pierre Lorquin, travelled widely in 1850–1851, including eastward on San Francisco Bay, farther east near Sacramento, and in the lower Sierra Nevada mountains including the lower drainages of the Yuba River and Feather River ('les montagnes de la Juba', in Butte, Plumas, Sierra and Yuba Counties) (Emmel, Emmel & Mattoon 1998a, pp. 4–7 & fig. 1; Boisduval 1852; Becker 1851), where adults occur that resemble the lectotype. The lectotype could have been collected within the ranges of four similar *Callophrys* taxa (*viridis*, *perplexa*, the central California Inner Coast Range *pseudodumetorum* Emmel, Emmel & Mattoon, 1998, and the Sierra Nevada *lemberti* Tilden, 1963).

9. The name *dumetorum* no longer clearly denominates the taxon that was meant because that name in a publication today could mean almost any of the butterfly taxa listed in this petition, and could apply to almost anywhere in western North America. Four examples of the current confusion: (a) K. Davenport (pers. comm.) has encountered difficulty deciphering the taxon meant by '*Callophrys dumetorum*' while entering collectors' locality records into the U.S. Biological Survey computer database; (b) Shapiro (2007, pp. 134–135) complained about the nomenclatural confusion involving *dumetorum* in his book on California butterflies; (c) Brock & Kaufman (2003, pp. 112–113), now the most popular butterfly book in North America, used the names *Callophrys perplexa viridis* (which is incorrect because *viridis* is older than *perplexa* and is a separate species) and '*Callophrys dumetorum/perplexa*', (d) the important book on caterpillars by Allen et al. (2005, pp. 58–59), the popular book by Glassberg (2001, pp. 92–93, 304), and the North American Butterfly Association (NABA, 1995) mistakenly combine several different species under *C. dumetorum*. There has been considerable historical confusion as well, as the name *dumetorum* has been applied to six different sets of butterflies: 1) from 1852–1923 it was applied throughout coastal and inland California to butterflies later proving to be two species; 2) from 1923–1944 to those same two species in northern California (*C. dumetorum perplexa* was used in southern California) (Comstock, 1927, pp. 168–169, pl. 50; Clench, 1944; Holland, 1931, p. 229, dos Passos, 1964; Miller & Brown, 1981, p. 105); (3) from 1944–1971 to northern California butterflies of the inland representative of those two species (Clench, 1944, 1961, 1963; Garth & Tilden, 1963, p. 36; Tilden, 1963; 1965; dos Passos, 1964; Dornfeld, 1980, p. 92; Miller & Brown, 1981); (4) from 1971–1998 to inland butterflies from both northern and southern California (Gorelick, 1971; Emmel & Emmel, 1973, p. 61; Scott, 1975); (5) from 1998–2006 to coastal butterflies of the second species (Emmel, Emmel & Mattoon, 1998a; Pelham, 2008); (6) now (without a neotype designation) *dumetorum* will replace the name of a third species, *C. sheridanii*, all over western North America, since Warren (2005, pp. 114–125), Pelham (2008) and Scott (2008) considered them conspecific.

10. A neotype for *Thecla dumetorum* Boisduval, 1852 is required to settle the disputed identity of this nominal species. We consider *dumetorum* to be a nomen dubium, and alternate interpretations of the name have caused instability in the

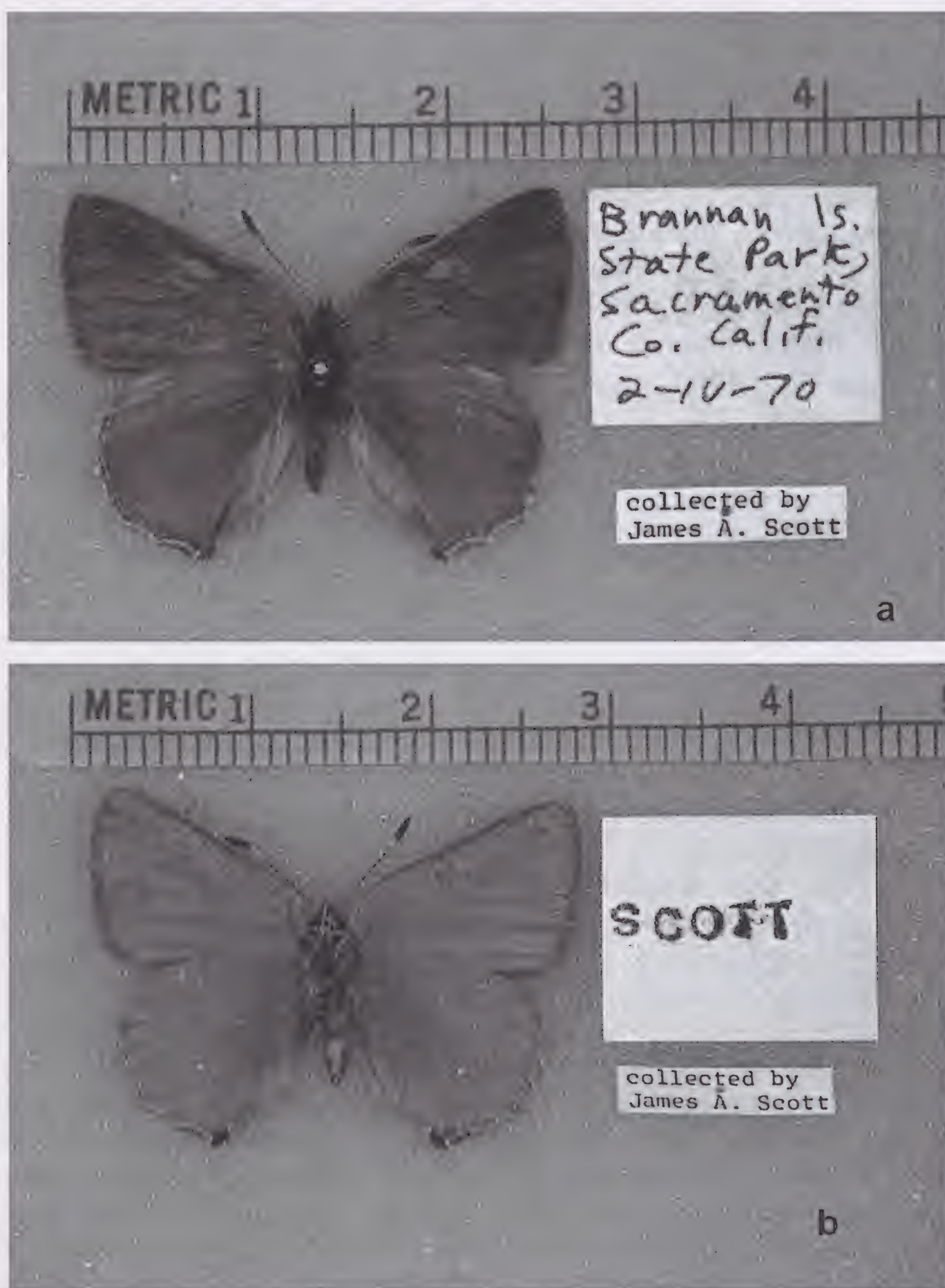


Fig. 1. Proposed neotype of *Thecla dumetorum* Boisduval, 1852 from Brannan Island, Sacramento Co. California. Dorsal top, ventral bottom.

usages of the names *dumetorum*, *viridis* and *perplexa*. The proposed neotype (Fig. 1) is a male that bears three labels: 'Brannan Is.[Island] State Park, Sacramento Co. Calif., 2-iv[April]-[19]70' (hand-printed) with a rubber-stamped black-ink printed 'SCOTT' on reverse; 'collected by James A. Scott' (printed); 'NEOTYPE *Thecla dumetorum*, designated by James Scott et al. March 2010' (hand-printed in red ink). It will be deposited in the Natural History Museum, London. The larval host plant at this locality is *Lotus scoparius* (Nutt) Otley (FABACEAE). This specimen was selected for the following reasons: (1) the area where it was collected was purportedly visited

by Pierre Lorquin, the collector of the lectotype of *dumetorum*; (2) this site (and the whole Central Valley of California) contains only one taxon of *Callophrys* (*perplexa*), thus there is no possibility of confusion with similar *Callophrys* in the Coast Range or Sierra Nevada; (3) it is common there and many specimens have been collected that are available for study; and (4) this population was used in a study comparing the wing pattern and biology of *C. dumetorum perplexa* with that of *viridis* (Gorelick 1971). The proposed neotype is a specimen of *perplexa* rather than *viridis*, because: (a) the 1998 lectotype seems more likely to represent *perplexa*; (b) that choice restores the 54-year usage of the name *dumetorum* for the inland California taxon (its usage for the coastal taxon formally lasted only 12 years); (c) that choice restores the name *viridis* to active use as the only undisputed name ever applied to the coastal butterfly; and (d) that choice facilitates the protection of the 133-year-old name *sheridanii*, discussed below. This neotype designation will eliminate most of the current confusion in *Callophrys* nomenclature. The name *perplexa* will become a junior synonym of *dumetorum* as Gorelick (1971) treated it (*perplexa* was used as the name of a species only after 1998 by some authors, so its demotion will not cause great difficulty).

11. Warren (2005) concluded that *Callophrys viridis* from California was conspecific with *Callophrys sheridanii*, based on the study of adult and larval traits, host plants, and distribution of sympatric populations of *Callophrys* in Oregon and northwestern California. He found that some southwestern Oregon populations were intermediate between *Callophrys sheridanii* and *viridis*, and also suggested that *Callophrys pseudodumetorum* (originally described as *C. perplexa pseudodumetorum*) from the Inner Coast Range of central California was similarly intermediate. Warren noted that *pseudodumetorum* couldn't be a subspecies of *perplexa* as originally described because the two were sympatric at the type locality of *pseudodumetorum* in Trinity Co. California without apparent interbreeding. Scott (unpublished) has located specimens in the University of Colorado Museum of Natural History (Boulder, Colorado) that indicate they are also sympatric in Stanislaus Co. California. Clench (1963) and Gorelick (1971) had hinted previously that *viridis* and *sheridanii* may be subspecies of one species. Accordingly, Scott (2008) considered *viridis* and *pseudodumetorum* conspecific with *C. sheridanii*.

12. This conspecificity is nomenclaturally unfortunate, because both names *dumetorum* and *viridis* are older than *sheridanii*. The name *dumetorum* will become a senior synonym of *perplexa* through the designation of the neotype requested in this petition, thus it will not supplant *sheridanii*. However, *sheridanii* is now threatened by the name *viridis*. The name *sheridanii* requires protection, because: (1) it has been continuously used for butterflies occurring across most of western North America since it was published in 1877, whereas *viridis* was only used from 1944–1998; (2) there have been about 250 usages of *sheridanii* in the butterfly scientific literature including dozens of major books such as Wright, 1905 (pp. 62, 212); Holland, 1931; Brown et al., 1957; Howe, 1975 (pp. 296–297); Dornfeld, 1980; Fisher, 1981, pp. 258–261; Scott, 1986; Pyle, 2002 and Royer, 2003 (p. 96) in U.S.A., and Layberry et al., 1998 (pp. 137–138, plates 28, 52); Bird et al., 1995 (p. 169); Guppy & Shepard, 2001 (pp. 208–209) in Canada, whereas the name *viridis* has been used much less frequently in scientific literature. The Secretariat holds a list of references to 229 scientific usages of the name *Callophrys sheridanii*; (3) *C. sheridanii* is a widespread

common species (Pelham, 2008; Scott, 2008), whereas the range of *viridis* has shrunk to two dozen colonies on the Pacific Coast near San Francisco; (4) *C. sheridanii* is beautiful and is one of the first butterflies to appear in spring, thus it is a popular image on many non-biological Internet sites; (5) *C. sheridanii* was declared Official Butterfly of the state of Wyoming by their legislature and governor in 2009; (6) considerable confusion and instability would result if the more familiar name *C. sheridanii* (with its nine nominal subspecies) were replaced by *C. viridis*, with the likelihood that the names would frequently be switched back and forth between *C. viridis* and *C. sheridanii* by researchers who disagreed about their conspecificity. Therefore, synonymising the name *sheridanii* would cause much more consternation and confusion than would the reversal of precedence of the name *viridis*, which would remain in use as a subspecific name. Article 81.2.3 applies to the names *viridis* and *sheridanii* because Warren (2005) and Scott (2008) considered them conspecific, thus treating them as subjective synonyms as per Article 61.3.1 and the Glossary of the 4th Edition of the Code. Warren (2005), Scott (2008) and Pelham (2008) declined to use the combination *C. viridis sheridanii* in anticipation that a petition would be submitted to the Commission to protect the name *sheridanii*. Conditional suppression of *viridis* will result in few complaints, because *viridis* is a useful undisputed name that will continue to be used for the coastal taxon, either as the species *C. viridis*, or as the subspecies *C. sheridanii viridis* whenever *viridis* and *sheridanii* are considered to be conspecific.

13. The International Commission on Zoological Nomenclature is accordingly asked:

(1) to use its plenary power:

- (a) to set aside all previous type fixations for *dumetorum* Boisduval, 1852, as published in the binomen *Thecla dumetorum*, and to designate as the neotype a male from Brannan Island, Sacramento Co. California, to be deposited in the Natural History Museum, London, as specified in para. 10 above;
- (b) to give precedence to the name *sheridanii* Edwards, 1877, as published in the binomen *Thecla sheridonii*, over the name *viridis* Edwards, 1862, as published in the binomen *Thecla viridis*, whenever the two are considered to be synonyms;

(2) to place on the Official List of Specific Names in Zoology the following names:

- (a) *dumetorum* Boisduval, 1852, as published in the binomen *Thecla dumetorum* and as defined by the neotype male from Brannan Island, Sacramento Co. California deposited in the Natural History Museum, London, as ruled in (1) above;
- (b) *sheridanii* Edwards, 1877, as published in the binomen *Thecla sheridonii*, with the endorsement that it is to be given precedence over the name *viridis* Edwards, 1862, as published in the binomen *Thecla viridis*, whenever the two are considered to be synonyms;

(3) to emend the entry on the Official List of Specific Names in Zoology for *viridis* Edwards, 1862, as published in the binomen *Thecla viridis*, to record that it is not to be given priority over the name *sheridanii* Edwards, 1877, as published in the binomen *Thecla sheridonii*, whenever the two are considered to be synonyms.

Acknowledgements

Robert K. Robbins (aided by Brian Harris) of the Smithsonian Institution sent photos of the *dumetorum* lectotype and offered advice. Norbert G. Kondla and John F. Emmel offered helpful comments.

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Acknowledgement of receipt of this application was published in BZN 67: 120.

Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to the Executive Secretary, I.C.Z.N., c/o Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).

Case 3521

***Megaselia abdita* Schmitz, 1959 (Diptera, PHORIDAE): proposed precedence over *Aphiochaeta griseipennis* Santos Abreu, 1921 (currently *Megaselia griseipennis*)**

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Abstract. The purpose of this application, under Articles 23.9.3 and 81.2.3 of the Code, is to conserve the specific name *Megaselia abdita* Schmitz, 1959 for a widespread Holarctic scuttle fly by giving it precedence over its senior subjective synonym *Megaselia griseipennis* (Santos Abreu, 1921), which has long been treated as a nomen dubium. A growing literature exists using the name *M. abdita*. It is proposed that the name *Megaselia abdita* be given precedence over *Megaselia griseipennis* (Santos Abreu, 1921) to avoid confusion.

Keywords. Nomenclature; taxonomy; Diptera; PHORIDAE; *Megaselia*; *Megaselia abdita*; *Megaselia griseipennis*; scuttle fly; Holarctic.

1. The scuttle fly genus *Megaselia* Rondani, 1856 is the largest genus of the family PHORIDAE and among the largest in the order Diptera. It exhibits a greater range of larval habits than has been documented for any other genus of insects. Currently there are around 1500 species that have been described, but it is estimated that at least ten times this number remain unknown. Its taxonomy has been complicated by sexual dimorphism such that males and females have frequently been described as separate species. Revisionary studies often result in the linking of the sexes with consequential proposals of synonyms. Unless especially distinctive, species are no longer named from females alone.

2. We report below the discovery that two species described from females only are in fact one species. However, the later name is widely used in the literature and we suggest that to synonymise it with the older name will only give rise to confusion and irritation. We therefore ask the Commission to conserve the later name.

3. Ever since one of us (RHLD), having previously examined two paratype females of *Megaselia abdita* Schmitz (1959, p. 123) (see Disney, 1984), then described the unknown male (Disney, 1987, p. 263), this has proved to be an important species in forensic cases in Europe and America (e.g. Disney, 1994; Greenberg & Kunich, 2002; Greenberg & Wells, 1998; Disney & Manlove, 2005; Manlove & Disney, 2008) and its CO1 signature has recently been determined (Boehme et al., 2010). It is also proving to be a useful laboratory insect in other studies (e.g. Schmidt-Ott et al., 1994; Stauber et al., 1999, 2000, 2002, 2008; Rohr et al., 1999; Bullock et al., 2004; Lemke et al., 2008; Rafiqi et al., 2008, 2010).

4. The species is widely distributed and is included in a range of identification keys for the scuttle flies of different regions (e.g. Disney, 1989; Disney & Ashmole, 2004, 2007; Disney & Aguiar, 2008; Disney et al., 2010). Likewise it is listed as *M. abdita* in the most recent catalogue of Palaearctic Diptera (Disney, 1991) and catalogues and checklists for individual countries that have followed since (e.g. Chandler, 1998; Prescher & Weber, 1999; Weber et al., 2007). Furthermore, editors of journals tend to favour the use of the names in the most recent checklists and catalogues. It is also referred to as *M. abdita* in papers on its ecology (e.g. Lindberg, 1961, 1962; Werner, 2004; Pérez Fernández, 2006; Durska et al., 2010) and its hymenopteran parasitoid (Notton, 1991).

5. Santos Abreu (1921, p. 57) described *Aphiochaeta griseipennis* from the female only. When what had survived of his collections was subsequently re-evaluated (Santos Abreu & Schmitz, 1934, p. 68) it was concluded that the identity of a single surviving pinned female of this species (by then re-assigned to the genus *Megaselia* Rondani, 1856) was not readily determinable. Indeed under 'Species incerti subgeneris', they wrote '*griseipennis* Santos. Unum ex. superstes ita sordet, ut nihil de ea specie statui possit' [The one surviving example as such is dirty, so I have not been able to determine anything from seeing it].

6. Despite his examination of this specimen (by then deposited in the Museum Koenig, Bonn), Schmitz (1959, p. 23) described *M. abdita*, also from females only (the holotype and 3 paratypes being deposited in the Museum Koenig, Bonn). Following Schmitz & Abreu, Borgmeier (1968) listed *M. griseipennis* under '*Megaselia*: species dubiae'. The name *M. griseipennis* has not appeared in the literature since.

7. RHLD recently remounted the single surviving specimen of *M. griseipennis* referred to by Santos Abreu & Schmitz (see previous paragraph) on a slide and has labelled it the lectotype; it is formally designated as such herein. This slide mount allowed recognition of critical features, including the internal characters of the SPS vesicles of the postpedicels and Dufour's crop mechanism. To RHLD's surprise the specimen proved to be the same species as *M. abdita*. Normally such a discovery would result in the proposal of the synonymy of *M. abdita* with *M. griseipennis*. However, this would only give rise to confusion and irritation. Indeed the indications are that forensic entomologists and those who use this species as an increasingly popular laboratory organism for research in genetics, evolution and development

studies are likely to continue to use the name *M. abdita*. The automatic reversal of precedence under Article 23.9.2 of the Code is not possible because the conditions of Article 23.9.1.1 are not met insofar as the senior name has been used as valid between 1921 and 1968. It is proposed that the Commission conserve under the plenary power the name *Megaselia abdita* Schmitz, 1959, which is a junior subjective synonym of *Aphiochaeta griseipennis* Santos Abreu, 1921.

8. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to rule that the name *abdita* Schmitz, 1959, as published in the binomen *Megaselia abdita*, is to be given precedence over the name *griseipennis* Santos-Abreu, 1921, as published in the binomen *Aphiochaeta griseipennis*, whenever the two are considered to be synonyms;
- (2) to place on the Official List of Specific Names in Zoology the following names:
 - (a) *abdita* Schmitz, 1959, as published in the binomen *Megaselia abdita*, with the endorsement that it is to be given precedence over the name *griseipennis* Santos-Abreu, 1921, as published in the binomen *Aphiochaeta griseipennis*, whenever the two are considered to be synonyms;
 - (b) *griseipennis* Santos-Abreu, 1921, as published in the binomen *Aphiochaeta griseipennis*, with the endorsement that it is not to be given priority over the name *abdita* Schmitz, 1959, as published in the binomen *Megaselia abdita*, whenever the two are considered to be synonyms.

Acknowledgements

RHLD thanks Dr Netta Dorchin (*Museum Koenig, Bonn*) for loan of the lectotype of *M. griseipennis*.

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Acknowledgement of receipt of this application was published in BZN 67: 119.

Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to the Executive Secretary, I.C.Z.N., c/o Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).

Comments on the proposed precedence of LATRIDIIDAE Erichson, 1842 (Insecta, Coleoptera) over CORTICARIIDAE Curtis, 1829 and the proposed conservation of usage of *Corticaria* Marsham, 1802
(Case 3517; see BZN 67: 145–150)

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With regard to LATRIDIIDAE (Coleoptera) which is threatened by the senior name CORTICARIIDAE, having been changed from LATHRIDIIDAE, the current family name is now well established and a further change would be unnecessarily problematic, especially given the recent publication of the *Coleoptera of Europe* Vol. 1 by Rücker & Wagner (2008) which uses the current name, as does the most recent checklist of beetles of the British Isles by Duff (2008). Similarly, relatively recent, but ongoing, developments such as the National Biodiversity Network and Non-native Species Information Portal also use the current name.

Additional references

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Rücker, W. & Wagner, T. 2008. *Coleoptera of Europe, Vol. 1: Latridiidae, Merophysidae and Dasyceridae*. 600 pp. Apollo Books.

(2) Hans-Peter Reike

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I'd also like to ask to reverse the precedence of the older name CORTICARIIDAE and to continue using the most common name LATRIDIIDAE. I have worked now for 12 years on this family and it would be much better and of more use for science (and also for myself) to preserve the well-known name LATRIDIIDAE.

(3) Hans Silfverberg

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I wish to support the proposal. The name LATRIDIIDAE is so widely used internationally that a change to CORTICARIIDAE would cause very much confusion, especially as the new Palearctic catalogue (Johnson, 2007b) will be the guide for entomologists for a long time. I think, however, that it might be worth mentioning somewhere that the type species of the genus *Latridius* Herbst has until recently been generally known as *Latridius anthracinus* Mannerheim, a name listed by Johnson (2007b) in the synonymy of *Latridius porcatus* Herbst.

(4) Wolfgang Rücker

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Since Herbst (1793) for about 200 years the name LATRIDIIDAE (LATRIDIVS, LATRIDIVN, or LATHRIDIIDAE) has been used and has become the generally known and acknowledged name for this group of beetles.

With the splendid work of my friend Colin Johnson (formerly of Manchester Museum) I think we now have a good basis and a stable nomenclature for the LATRIDIIDAE. Since his revision (Johnson, 2007b) the name LATRIDIIDAE has become established and should not be changed again (Colin Johnson and I have used the name LATRIDIIDAE now for over 40 years).

With a change to CORTICARIIDAE I see the following problems: (1) LATRIDIIDAE is the best known name for this beetle family; (2) LATRIDIIDAE is especially used for the description of new taxa in the literature worldwide; (3) A literature search in libraries and on the Internet will always find LATRIDIIDAE, but CORTICARIIDAE is not well enough known.

My request to the Commission on Zoological Nomenclature is to please let the junior but well known name LATRIDIIDAE be preserved for this family of beetles.

(5) Martin Brendell

Natural History Museum, London, U.K. (retired)

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Many species of LATRIDIIDAE are of great economic importance worldwide and a vast amount has been published on their biology and control using the current family name. Most seeking the latest information and advice on damaging latridiid species will not be aware of taxonomic changes as they happen and will undoubtedly miss out on future publications should the name 'CORTICARIIDAE' be used, possibly with serious economic consequences. In this case I consider it would be seriously confusing if not downright obstructive to adopt the older name. Please register this note as an objection to any proposal to adopt the family name 'CORTICARIIDAE' in preference to the current internationally used name LATRIDIIDAE.

Comments on the proposed precedence of *Maculinea* Van Eecke, 1915 over *Phengaris* Doherty, 1891 (Lepidoptera, LYCAENIDAE)
(Case 3508; see BZN 67: 129–132)

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I support this application. On the one hand, it is important for nomenclatural stability. On the other hand, the name *Maculinea* is widely used by conservationists. Several species of the genus are included in numerous Red Lists and Red Books at both national and international levels; for instance, 3 species of *Maculinea* are included in the Red Book of Armenia. Changing this name will lead to many problems for specialists in nature protection and will increase the misunderstanding that already exists among taxonomists and practical workers who can't accept something that they consider to be some kind of 'bureaucratic game'.

(2) David Hubble

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The Lepidopteran genus *Maculinea* is threatened by the name *Phengaris*. This genus includes the Large Blue Butterfly (*M. arion*) and its relatives. *M. arion* has such an unusual and well publicised life-cycle, and has been the subject of such intensive conservation efforts, that its scientific name is widely used by the general public. This is an uncommon situation, and public understanding will be harmed if the name is changed e.g. if non-specialists are unaware of this and can not find subsequently published information. I support retention of the current name over the proposed change to a senior name.

Comment on the proposed conservation of usage of *Testudo gigantea* Schweigger, 1812 (currently *Geochelone (Aldabrachelys) gigantea*) (Reptilia, Testudines)
(Case 3463; see BZN 66: 34–50, 80–87, 169–186, 274–290, 352–357; 67: 71–90, 170–178)

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‘Googleology’: powerful tool or unreliable evidence?

Introduction

In recent years the internet has become a much used and very important tool for diverse forms of research. The various ‘search engines’ that allow users to execute searches on words or expressions and have results in a matter of seconds are especially useful and of these the Google search engine is probably the most popular (see Nielsen’s Net Ratings at http://blog.nielsen.com/nielsenwire/online_mobile/top-u-s-search-sites-for-may-2010/ for U.S.A. based results). These technologies are not only relatively young but they are evolving very rapidly, so it is a challenge even for specialists in information technology to keep up to date with these very powerful tools. We hope that this article will help taxonomists to employ these tools correctly.

It is quite common to use a tool without reading the manual. Many of us have suffered the consequences of such expedience and realise that it is usually unwise. It is especially unwise when using that tool for scientific measurement. Google is no exception. A recent comment by Bour et al. (2010, BZN 67: 73–77) used the results of Google searches as evidence to support their arguments about the relative frequency of certain generic and specific names used for the Aldabra tortoise. We will show that this approach is an unacceptable way to use internet search engines for claims of notoriety or popularity of usage. Of particular importance, authors using such an approach with the Google search engine should: (1) consult the Google manual; (2) consult the literature on using search engine hits as a representation of notability; and (3) perform post-collection data validation and verification.

Step 1: Read the Manual

The Google (2010a) documentation states: ‘Google’s calculation of the total number of search results is an estimate. We understand that a ballpark figure is valuable, and by providing an estimate rather than an exact account, we can return quality search

results faster. In addition, when you click on the next page of search results, the total number of search results can change. In this case, we realise that some of the query results are duplicates, and collapse those duplicates so that you can find the specific result you're looking for more easily. Collapsing the duplicates decreases the estimated number of results, as well as the overall number of results pages' (Google, 2010a).

How much does this 'collapsing' impact the 17,600 records that Bour et al. (2010, BZN 67: 73–77) reported for *Dipsochelys dussumieri* (Gray, 1831)? We begin with a total number of 17,100 (slightly fewer than the 17,600 reported in the Bour et al. paper). We then click forward one page to look at a few of the results and the number drops immediately to 3180. We then go to the last page of the search results to find out that after collapsing duplicates there are 547 retrievable pages. The Bour et al. estimate using the initial Google estimate of 17,600 was off by 17,000.

When the Google documentation states, 'We're aware that we sometimes return erroneous estimates for the number of results that return for a query, and we're working to improve these estimates' (Google, 2010b) it should be heeded.

Step 2: Scholarship

While at first glance the table of figures in Bour et al. (2010, BZN 67: 76), with purported quantification of usage of both generic and specific names, appears thorough, the authors failed to do a follow-up investigation on the results of their Google searches: they evidently did not query many of the 17,600 hits that they reported. Had they done so, they would have found that the vast majority are websites and web addresses, with a very small proportion of 'hard copy' publications, whether published as 'grey literature' or in peer-reviewed scientific journals. A follow-up, or literature search, quickly points out some of the pitfalls of the Google 'of about' statistic. Kilgarriff (2007) documents the substantial differences between actual 'hits' (i.e. individual records from an internet search) and real pages, but he also points out a variety of other potholes. Particularly, he explains that hits do not imply anything about the quality of those records. That is, a blog entry and a peer-reviewed publication count exactly the same in this sort of search. Uyar (2009) compares three different search engines (Google, Yahoo and Bing) across single word and multiple word accuracies and finds each of them wanting both in terms of providing pages which are not truly related to the search terms and also missing pages that are in fact related: 'The percentages of accurate hit count estimations are reduced almost by half when going from single word to two word query tests in all three search engines. With the increase in the number of query words, the error in estimation increases and the number of accurate estimations decreases.' (Uyar, 2009).

Bour et al. (2010, p. 76) noted that the Google search results were unstable, but they did not investigate further. Instead, they attributed the instability to some real phenomenon concerning a nomenclatural debate about the name of the Aldabra tortoise. However, the instability in the Google results is evidence that the results that they reported bear little relationship to the notability of the competing names for the Aldabra tortoise. Furthermore, a comparison of the use of other terms could have pointed out the folly of the approach. For example, Google searches on the terms ['venomous snakes'] and ['poisonous snakes'] provide an interesting comparison. ['Venomous snakes'] returns 250,000 'results', with a retrievable number of 817.

['Poisonous snakes'] also gets about 250,000 'results', but with 833 retrievable. The numerical superiority of the second expression is unlikely to convince many herpetologists to change their lexicon however. Even Wikipedia (2010a) does not recommend the use of Google's results count as a measure of notability.

Note that Google uses a convention of square brackets to punctuate search terms in their documentation. That is, the brackets help differentiate ["word1 word2"] meaning the exact phrase "word1 word2", and [word1 word2] meaning both words appear in the document. We only use the ["Genus species"] for all searches reported in this study because using [Genus species] can lead to results where the generic term refers to the tortoise and the specific term refers to an altogether different animal. The specific search [gigantea] by itself estimates 782,000 results and [dussumieri] returns an estimated 261,000 results.

Step 3: Validate the data

Not checking errors in one's data is rarely wise, albeit that many of us have fallen prey to it from time to time. Yet, in the case of the numbers presented by Bour et al. (2010), confirmations bias seems to have led to faith in data unseen and data unknown. A simple check of a few of the lower PageRanked websites (see below for an explanation of PageRanked) would have shown that the results were not all directly relevant to usage of the nomenclature under consideration. For example, towards the end of the list, in the 400s, we find a pet food store, a reptile care forum, and translations of the Wikipedia page on the tortoise (the entire list of 547 records has been deposited with the ICZN Secretariat). While the name *Dipsochelys dussumieri* occurs – inconspicuously – in a short, obscure list on several of these websites, none of them is likely to have much relevance to anyone looking for the scientific name of the Aldabra tortoise. Furthermore none of these sites have the appearance of being an authoritative source of information on scientific names.

A few examples of the most irrelevant results ostensibly for *D. dussumieri* are:

- (1) Pet food store <http://www.reptile-food.ch/Galerie-Reptilien-in-freier-Natur/>. (The name *Dipsochelys dussumieri* appears in an inconspicuous list).
- (2) Reptile forum <http://www.reptileforums.co.uk/forums/shelled-turtles-tortoise/320545-substrate.html>. The usage in the case of this forum is merely a tag in the forum topic. This forum includes the erudite posting about white stuff in tortoise urine. (The name *Dipsochelys dussumieri* appears in an inconspicuous list).
- (3) A blog entry. This blog entry is about cats and roses – hardly a use of the term under discussion, let alone a scientific reference to the Aldabra tortoise. http://rvoulgari.blogspot.com/2008_08_01_archive.html (no apparent mention of a scientific name for the tortoise).
- (4) A picture of a snake. http://www.clin-dieu.be/Galleries/animaux/animaux.php?zoom=1&d=6&page=1&nb_img=7&break=&picture_id=177&sub_category_id=1 (no apparent mention of any scientific name for the Aldabra tortoise).

Within the 632 records for the search ['*Geochelone gigantea*'] there are similarly irrelevant results, including 5 postage stamps, 5 library search engines and 2 pornographic sites. The following are a few examples of the most irrelevant results from a search on ['*Geochelone gigantea*'].

- (1) "Aldabrasköldpaddan (*Geochelone gigantea*) lever på Aldabra i Seychellerna och" and "Aldabranjättiläiskilpikonna (***Geochelone gigantea***) on erityisesti Aldabran

Species	GENUS				Species total all genera
	<i>Testudo</i>	<i>Geochelone</i>	<i>Aldabrachelys</i>	<i>Dipsochelys</i>	
<i>gigantea</i>	177	883	74	10	1144
<i>elephantina</i>	45	0	39	44	128
<i>dussumieri</i>	19	6	6	132	163
Genus total all species	241	889	119	186	1435

Table 1. Number of publications that include any of the 3 species names in combination with any of the 4 generic names above.

atollilla Seychelleillä tavattava yksi maailman suurimmista kilpikonnista” are exact Swedish and Finnish translations of the English language Wikipedia page; they are not separate, unique uses of the name.

(2) www.smacksy.com/2009_10_01_archive.html. The site is a personal blog dedicated to funny stories about a child named Bob who wanted to know if two turtles were kissing.

(3) <http://www.pets-classifieds.co.uk/sed/33112.html>. The site seems a good place to find a squirrel or a Jack Russell terrier, but has little relevance to the use of names for the Aldabra tortoise.

The above examples reflect three issues with the standard Google search as a measure of usage:

- (1) Sites that have no mention anywhere of any scientific name of the Aldabra tortoise, and are thus completely irrelevant to the list.
- (2) Sites that might have a scientific name of the Aldabra tortoise, but it is inconspicuous, unlikely to have much relevance to people looking for the ‘correct’ name, and certainly not a professional/authoritative site.
- (3) Exact copies of information on other pages.

A verification of each of the 527 results for *D. dussumieri* and 632 results for *G. gigantea* provided further illumination of the issues with the general Google search approach (See Fig. 1). The most common use of *dussumieri* is in wikis, with 81 results. Wikis are group edited, online documents. These may be managed by large or small groups of people. The most famous is the Wikipedia site which is one of the most widely used online encyclopedias (Leuf & Cunningham, 2001). Many (40) of the 81 wiki sites for *dussumieri* were the English language Wikipedia accounts or direct translations into other languages. Journals, books, and magazine articles followed with 73 (10 of these were duplicates, but linked in different sources so we leave them in as evidence of the potential issues involved in the Bour et al. approach). *G. gigantea* had nearly twice the number of journal, book and magazine articles with 128. Overall, including many clearly irrelevant hits for both of the two scientific names under discussion, there were 18% more hits for *G. gigantea* than for *D. dussumieri*.

The table on page 76 in Bour et al. (2010) is misleading. It lacks an understanding of the tool used, simple scholarship, and basic data validation. The ‘occurrence’ figures therein bear little relationship to actual documents, unique references, or in some cases references to the Aldabra tortoise at all. In this light, the table is highly

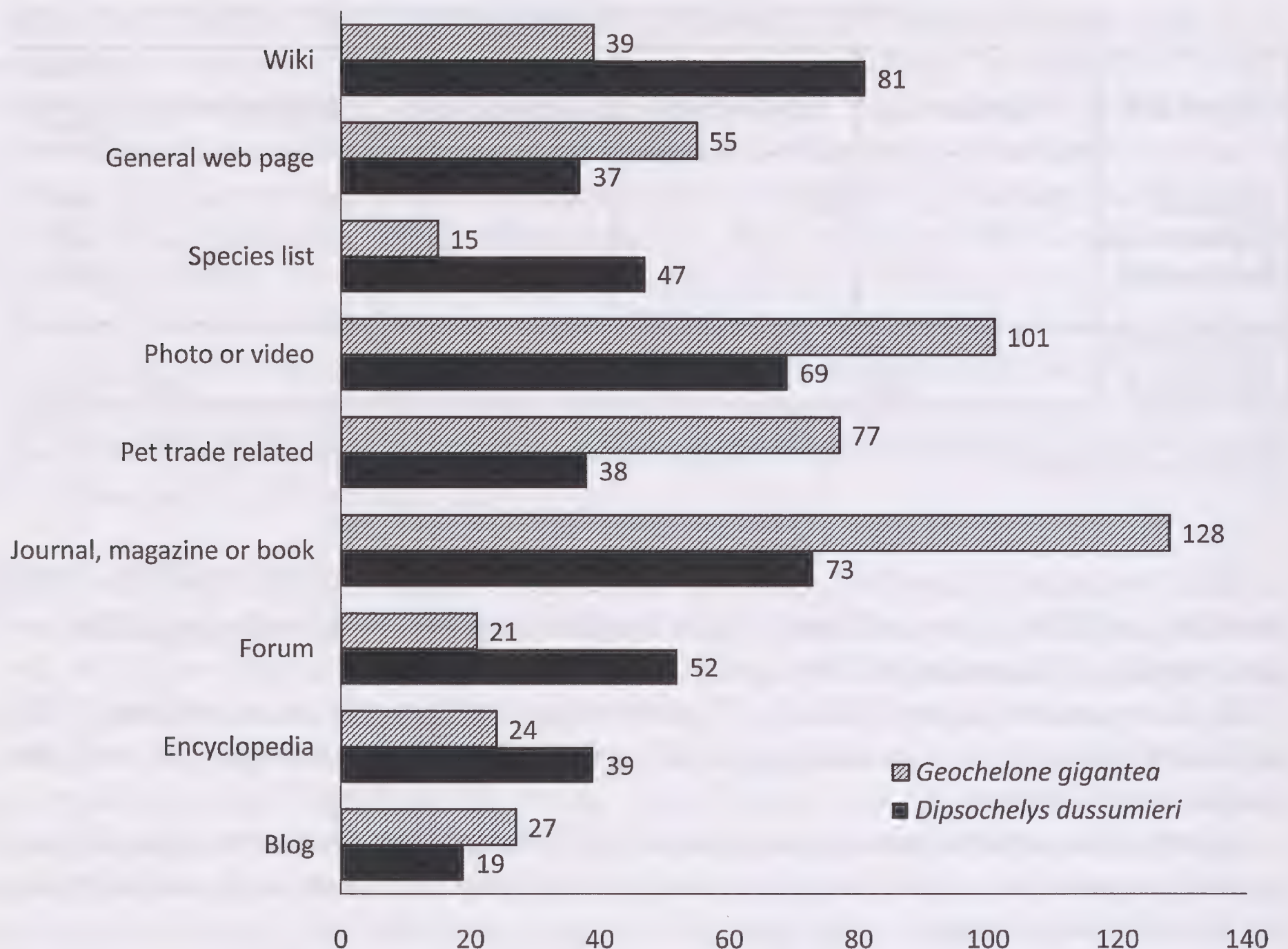


Fig. 1. Frequencies of 'hits' for the searches [*Geochelone gigantea*] and [*Dipsochelys dussumieri*] grouped into general categories (the top nine are presented here): overall total 'hits' for *G. gigantea*=632, overall total 'hits' for *D. dussumieri*=527 (for 26 May, 2010).

misleading because the figures presented do not represent what they are claimed to represent.

Bour et al.'s (2010) results should be viewed as inaccurate and their method avoided. Few biological researchers know the inner workings of Google searches. The code is, in fact, not published. There are only a few articles and Google webmaster manual pages that give a hint of the inner workings. In the same vein, most of us do not know how rack and pinion steering or disk brakes work, but we depend on them to get to work every day when using an automobile. Google and other search engines have become, to a great extent, like an appliance. We know how to use its basic features and we depend on it, but the finer details are a mystery. The following sections will demystify Google a little, as well as present a better method for compiling the sources on an issue using the internet.

Why Google doesn't give every page on every search

Google's purpose in design was, and still is, to be very fast while overcoming the spam and junk pages that plagued earlier search engines (Page et al., 1998). Google founder, Larry Page, began with a citation index concept that assumed that if a lot of people on the web thought something was important, the searcher would too. The Google search algorithm, called 'PageRank', is similar in principle to the 'H citation index' (Hirsch, 2005). The more times a page is linked by other pages, the higher the

PageRank (i.e. page rank). The higher the page rank of the linking page, the higher the weight. PageRanks go from 0–10, with 10 being the most important.

Google obtains these ranks by ‘crawling’ the web. That is, it downloads and parses each page that it determines as relevant (or that the owner/operators submit to the indexing engine via Google’s webmasters site (Google, 2010c). Those pages are parsed for all the meaningful words, and an index is created of where in the document each word exists. That document is given a document ID number, compressed, and stored. The index data is then added to the main index which is distributed to local search computers around the world that perform the actual searches.

Google does not index every web page on the net. In fact you can block your site from being indexed using a couple simple techniques. At the same time, a website owner/operator can purposefully link their page to a certain word or expression, even though the website has nothing at all to do with the term; in this way, by selecting popular terms, an owner can increase exposure to their website and thereby increase sales and revenues. There are also locations where the top trends for a day are listed, such as the Google trends site (Google, 2010d). A web site operator can look at the hot trend words and add them to the site or buy AdWords reflecting hot topics.

When a search term is entered by an internet user, Google searches for that word in the index. It computes both relevance and page rank statistics, and then sorts the results. Google returns the top results according to weighting by relevance and page rank and then proceeds to lower relevance page rank items. When the search ‘*Geochelone gigantea*’ is performed, then the retrievable hits (those with a high enough rank and relevance) are displayed in a sequential series of pages. Another statistic that says ‘results 1–10 of about xxx,xxx’ also appears on the top right of the first of these pages. This led to ‘about 17,100 results’ when the Google search [*Geochelone gigantea*] was performed on May 22nd, 2010. There were 632 retrievable results from the 17,100. The most relevant sites or most popular sites were near the top of the listing. The results that contained many of the journal articles appeared near the middle of the listings. This result is not unique however. If the exclusion terms for wiki, forum, blog, YouTube, etc are added, i.e. the search is on: ‘*Geochelone gigantea*’ -forum -wiki -blog -youtube -photo -blogspot, then Google returns an estimate of 11,000 pages. Many might think this would be a subset of the previous search with the pages containing the negated terms removed, but it is not. Of these, only 730 are retrievable, but the results contain pages not in the first search. Hence the results of the second search were not a subset of the first search, but a different set with different relevance and rank statistics. While this might seem logically inconsistent, it is a reflection of Google’s trade-off between, speed, relevance, and popularity.

There are strategies and activities a webmaster can employ to improve the page rank. This is known as search engine optimisation or SEO. One easy and direct way to do this is to edit a Wikipedia page and put links to your site(s) in there. Since Wikipedia is the most popular online encyclopedia (Alexa, 2010), your page rank would probably increase. For example, the Aldabra Giant tortoise page at Wikipedia (Wikipedia, 2010) has two links to islandbiodiversity.com and one to arkive.org. Arkive.org in turn links to islandbiodiversity.com. This link-back and link clustering can help raise a website’s page rank and thus increase its chance of being seen in a Google search.

Google is constantly adding new features to make sure that page owners do not play tricks with Google to falsely elevate their rank. The web entrepreneurs are constantly trying to outwit Google's attempts, however. Hence there is a bit of Alice in Wonderland's Red-Queen who required 'all the running you can do, to keep in the same place' in the ever-changing Google technology (Carol & Haughton, 2003 for the literary reference; Van Valen, 1977 for an evolutionary reference).

Another approach to getting one's website to the top of Google's page is through the use of AdWords. That is, advertisers and any other interested party pay Google to put their link at or near the top when certain words are searched. If someone clicks on the sponsored link, the advertiser pays Google a pre-negotiated rate per click. There is no limit to the number of organisations that can purchase the same AdWord, but that organisation or person paying the most for the search word gets to be at the top of the display. If one does a search on 'tortoise', Wikipedia comes up first, but just to the right in the sponsored links section is a 'sponsored link' for Galapagos.org and ask.com.

One of us (N.P.) purchased the AdWords 'geochelone' and 'dipsochelys' to get into the sponsored links space on Google. A tight maximum daily cap of \$2.00 was set so this sponsored link will not come up with every search, but it could if we wanted to pay the cost. So for 0.75 U.S. dollars, neilpelkey.net is on par with Wikipedia with the conspicuously displayed notice 'Study in the Andamans', even though neilpelkey.net has a PageRank of just 0.

Thus while Google is impressive technology that can produce rapid and highly relevant web searches, it puts Wikipedia, online archives, blogs, and web forums at a higher rank than published literature. It is also fairly time-consuming to check each of the links that are fetched. For example, we spent an estimated 26 hours doing web searches to provide the basic information reported here.

'Scientific Webology': A better approach

We suggest that a better approach for determining the relative frequency of use of different scientific names is a dedicated search of the published literature, legitimate web exchanges, and web data sources. While Google Scholar might seem like a viable alternative to the normal Google, it is far from complete. We therefore set about to search specialised bibliographic web sources including SCIRUS, PubMed, and Oxford Journals. We also used proprietary sources including EBSCO Premier (Taylor & Francis, etc.), Science Direct (Wiley Interscience), BioOne and Jstor. While this would not find every publication, it should start to approach a reliable comparison of publications or electronic usage.

It is important to point out that monographs and books are less likely to be archived on the web than shorter journal articles and reports. Also, newer articles are more likely to be available on the web than older articles. Some articles which have not been digitised may have no web reference at all. Hence, for the case in hand, some older records that used any scientific names that included the species *gigantea*, which has been in use since 1812, would be invisible to web searches. The earliest electronic reference we found was to Lartet et al. (1851), but clearly the percentage of early journals and other sources currently digitised is a small proportion (less than 5%; see Kelly, 2006). Furthermore grey literature such as correspondence and newsletters

from previous decades will never be digitised while more current grey literature such as Wikipedia and other user-driven encyclopedias will appear atop the Google search results.

The steps used here to provide a more accurate estimate of usage of the generic and specific terms were to:

(1) have a single researcher search the commercial sites Science Direct, EBSCO Academic Search Premier, Jstor, and BioOne;

(2) have two different researchers do exactly the same searches independently using the publicly available search engines: SCIRUS, Oxford, PubMed, and Google Scholar;

(3) repeat steps (1) and (2) for the four generic, three specific, and twelve binomial names that are shown in the table in Bour et al. (2010);

(4) download all citations located in all of these searches into the online Zotero bibliographic data tool (Zotero, 2010);

(5) inspect each record, cleaning up the citations and removing duplicates from each generic, specific, binomial combination;

(6) upload the cleaned-up records to the online bibliographic service Cite-U-Like, attaching tags for genus, species, and the combinations thereof; and

(7) compile the results.

This approach provides a publicly accessible bibliography with electronic links to all the citations electronically available. It will also provide, available on request, a database of all of the citations located in this study, which can be used for further analysis. It should be noted that the database still includes some duplicates. This is because some articles list more than one generic and/or specific name and/or binomial combination, which is a function of the search process by combinations. There are also some links that have become 'dead' since the original search. We invite people to upload legitimate citations that we may have missed that have scientific or academic use of any of the scientific names under discussion; people are also invited to comment on links to citations that are broken.

Results

The results of the above approach are presented in Fig. 1 and are available at <http://www.citeulike.org>. The citations can all be seen by signing up for citeulike and joining the group 'dussumieri vs. gigantea'. The citeulike group data presented here is for May 26, 2010.

It is clear that the scientific and academic use of *gigantea* is an order of magnitude higher than that of either *dussumieri* or *elephantina*. *Geochelone* has five times the usage of *Dipsochelys* and four times that of *Testudo*. There might be other arguments for nomenclature based on other criteria, but the common usage measured by a more reliable electronic search leans strongly in favor of *gigantea*. Even in the flawed approach used in Bour et al., *dussumieri* produced half the use of *gigantea* in regard to 'hard copy' publications.

Acknowledgements

Thanks to Jack Frazier, Janaki Lenin, Anand Pillai, Uwe Fritz, Jeanne Mortimer and two anonymous reviewers for invaluable comments and editorial suggestions.

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**Comment on the proposed conservation of usage of *Allosaurus* Marsh, 1877
(Dinosauria, Theropoda) by designation of a neotype for its type species *Allosaurus fragilis* Marsh, 1877**

(Case 3506; see BZN 67: 53–56, 178)

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We are writing to support the petition (Case 3506) of Paul & Carpenter to conserve usage of *Allosaurus fragilis* Marsh, 1877 as the type species for genus *Allosaurus* by designating USNM 4734 as the neotype for *Allosaurus fragilis* Marsh, 1877. We support this conservation because of the taxon's widely accepted usage by palaeontologists and its entrenched familiarity among the general public.

The holotype material of *Allosaurus fragilis* Marsh, 1877 (YPM 1930) from the Morrison Formation near Garden Park, Colorado, includes an incomplete tooth, an incomplete dorsal centrum, two fragmentary caudal centra, rib fragment, midshaft of right humerus, and right pedal phalanx III-1. Although this fragmentary material is distinct from other theropod taxa known from the Morrison Formation, it cannot be differentiated from other allosauroid and basal tetanuran taxa described from Jurassic and Cretaceous strata worldwide and therefore is not diagnosable as a distinct taxon.

Including the original hypodigm for *Allosaurus* (Marsh, 1877; Evanoff & Carpenter, 1998), there are at least three individuals referable to *Allosaurus* from the type locality, Felch Quarry 1, Garden Park, Colorado (Gilmore, 1920). Designation of a neotype for *Allosaurus fragilis* Marsh, 1877 from the holotype locality is thus appropriate because it fulfills Article 75.5.

Paul & Carpenter's proposed neotype, USNM 4734, is an associated skeleton with a disarticulated skull that preserves enough material to serve as a stable type for *Allosaurus fragilis* Marsh, 1877. Therefore, we support its selection as a neotype. However, we wish to clarify which cranial material of USNM 4734 should be included. The specimen was partially disarticulated, incomplete, and restored prior to 1920. Based on size comparisons, the premaxilla is likely to be from another individual.

Therefore, we support the petition (Case 3506) of Paul & Carpenter with the caveat that the proposed neotype, USNM 4734, should include *only* the skeletal elements listed here. Cranial elements of USNM 4734 clearly referable to a single individual consist of the left maxilla, both nasals, both lacrimals, right jugal, both postorbitals, right quadratojugal, both squamosals, right quadrate, right prefrontal, both frontals, both parietals, a complete braincase, both ectopterygoids, right pterygoid, right articular, right surangular and right prearticular. Postcranial elements referable to this individual consist of: all nine cervical vertebrae; all dorsal vertebrae except D1

and D9; all five sacral vertebrae; 33 caudal vertebrae from various regions of the tail; 6 chevrons; right cervical ribs 3–6, 8, 9; all 14 dorsal ribs from the right side; and most of the gastral ribs. Appendicular elements include: complete shoulder and hip girdles, a furcula, and complete forelimbs and hindlimbs.

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Comment on the proposed conservation of usage of *Rhynchotherium* Falconer, 1868 (Mammalia; Proboscidea): by designation of *Rhynchotherium falconeri* Osborn, 1923 as the type species

(Case 3515; see BZN 67: 158–162)

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I have carefully read over the petition by Dr Lucas regarding the conservation of the genus *Rhynchotherium* and strongly support his petition. I have coauthored several taxonomic papers with Dr Lucas in which we discussed the specific and generic level taxonomy of North American Blancan (Pliocene) *Rhynchotherium* (Lucas & Morgan, 1996, 2005, 2008). I have also coauthored several other papers in which the genus *Rhynchotherium* is mentioned and discussed in either a taxonomic or biostratigraphic context (Morgan & Hulbert, 1995; Morgan & Lucas, 2003; Morgan et al., 2008; Webb et al., 2008). Therefore, I am quite familiar with the taxonomic history of the genus and the nomenclatural problems that Dr Lucas discusses in his petition.

Rhynchotherium is one of the most oft-cited generic names of Pliocene proboscideans in North America, and is universally recognised as one of the most diagnostic genera of mammals of the Blancan North American land mammal age (NALMA). Almost all North American palaeontologists working on proboscideans or on Pliocene faunas regard *Rhynchotherium* as a valid genus in the context discussed by Dr Lucas. I consider it highly significant that Dr Lucas could find only one paper in which *Rhynchotherium* was considered to be a junior synonym of *Gomphotherium* (under Item 6), and that paper is an unpublished Masters Thesis (May 1981).

I feel very comfortable in stating that most mammalian palaeontologists consider Pliocene species such as the Blancan *falconeri* to be typical of the genus *Rhynchotherium*. The standard concept of the genus is that which Dr Lucas proposes to conserve, a Pliocene animal characterised by a shortened and downturned mandibular symphysis with two lower tusks often bearing lateral enamel bands. This is the

morphology and age that characterise all Pliocene *Rhynchotherium* such as *R. falconeri*, but not the currently recognised type species *R. tlascalae*, a late Miocene animal from Mexico and Central America with a more elongated mandibular symphysis that is not noticeably downturned. The Mexican species *tlascalae* and the species *R. blicki* from the late Miocene of Honduras are clearly referable to *Gomphotherium*, and are not included in the concept of *Rhynchotherium* as understood by most workers.

Another critical factor in conserving the name *Rhynchotherium* is that this genus is important in the biostratigraphy of North American Pliocene faunas. The extinction of *Rhynchotherium* at about 2.2 million years ago is often cited as an important factor signifying the end of the Blancan NALMA (Lindsay et al., 1984; Bell et al., 2004). Although I realise the petition by Dr Lucas is strictly a nomenclatural matter, the ramifications of a change in the generic name would extend beyond the fields of nomenclature and taxonomy. In this case it is important to conserve the name *Rhynchotherium* because most biostratigraphers are not familiar with the taxonomic literature on proboscideans. Therefore they rely on the derivative faunal literature, which in almost all cases uses the name *Rhynchotherium* in the context proposed by Dr Lucas, as a Pliocene genus with *falconeri* as the typical species, not as a Miocene genus with *tlascalae* as the type species.

Nomenclatural stability would definitely be achieved by conserving the name *Rhynchotherium*, rather than placing it in the synonymy of *Gomphotherium*. If *Rhynchotherium* is placed in synonymy, then a new generic name would have to be proposed because no other name is available. A new generic name would confuse workers in the field and upset nearly 100 years of established usage of *Rhynchotherium*.

In summary, I strongly support the petition by Dr Lucas to conserve the generic name *Rhynchotherium* and designate *Rhynchotherium falconeri* Osborn, 1923 as the type species of the genus.

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OPINION 2253 (Case 3428)***Palaemon rosenbergii* De Man, 1879 (currently *Macrobrachium rosenbergii*; Crustacea, Decapoda): usage conserved by designation of a neotype**

Abstract. The Commission has conserved usage of the specific name of *Macrobrachium rosenbergii* (De Man, 1879) by setting aside all previous type fixations and designating a neotype for the nominal species *Palaemon rosenbergii* De Man, 1879.

Keywords. Nomenclature; taxonomy; Crustacea; Decapoda; PALAEMONIDAE; *Macrobrachium*; *Macrobrachium dacqueti*; *Macrobrachium rosenbergii*; giant freshwater prawn; Southeast Asia.

Ruling

- (1) Under the plenary power it is hereby ruled that all previous type fixations for the nominal species *Palaemon rosenbergii* De Man, 1879, are set aside and specimen no. RMNH D 1065 at the Nationaal Natuurhistorisch Museum, Leiden, Netherlands (lectotype of *Palaemon dacqueti* Sunier, 1925) is designated as the neotype.
- (2) The name *rosenbergii* De Man, 1879, as published in the binomen *Palaemon rosenbergii* and as defined by the neotype designated in (1) above, is hereby placed on the Official List of Specific Names in Zoology.

History of Case 3428

An application to conserve the usage of the specific name of *Macrobrachium rosenbergii* (De Man, 1879) for a commercially important giant freshwater prawn from Southeast Asia by designating a neotype was received from D. Wowor (*Research Centre for Biology, Indonesian Institute of Sciences (LIPI), Cibinong, Indonesia*) and P.K.L. Ng (*National University of Singapore, Republic of Singapore*) on 26 June 2007. After correspondence the case was published in BZN 65: 288–293 (December 2008). The title, abstract and keywords of the case were published on the Commission's website. Comments supporting the case were published in BZN 66: 340–341 and 67: 64.

Decision of the Commission

On 1 December 2009 the members of the Commission were invited to vote on the proposals published in BZN 65: 291. At the close of the voting period on 1 March 2010 the votes were as follows:

Affirmative votes – 24: Ballerio, Bouchet, Brothers, Fautin, Grygier, Halliday, Harvey, Kottelat, Krell, Kullander, Lamas, Lim, Minelli, Ng, Patterson, Pape, Papp, Rosenberg, Štys, van Tol, Winston, Yanega, Zhang and Zhou.

Negative votes – 3: Alonso-Zarazaga, Bogutskaya and Kojima.

Pyle was on leave of absence.

Voting FOR the proposals, Brothers said that the statement, 'A new name, *Macrobrachium wallacei* sp. nov., is here proposed for the species identified as *Macrobrachium rosenbergii* in Wowor & Ng (2007)' surely actually referred to *Palaemon spinipes* Schenkel, 1902. He thought that this must be the true taxonomic species involved (after the change of type specimens for *Macrobrachium rosenbergii*) despite the unavailability of that name through homonymy. The new name should therefore have been explicitly proposed to replace *Palaemon spinipes* Schenkel, 1902 (rather than this merely being implied) and would therefore clearly have the same type specimen(s) as *Palaemon spinipes* Schenkel, 1902. Brothers noted that there was no discussion of this in the application, but it appeared that the designation of the supposed 'holotype' of *Macrobrachium wallacei* may be invalid. However, this did not affect the requests enumerated in the proposals. Also voting FOR, Grygier said the formal proposals to the Commission only concern *M. rosenbergii*, and clearly require a YES vote, but he is dissatisfied with the manner of proposal of the new species name *M. wallacei*. He said that if the Case is voted down, the authors will have succeeded only in proposing another junior synonym. Because the latter name can't actually become the valid name for the species involved until the original holotype of *M. rosenbergii* has been suppressed, it is somewhat unclear to him whether Article 11.5 for availability is satisfied. He felt that could have been clarified by a proposal to put *wallacei* as well as *rosenbergii* on the Official List. No diagnosis of the new species is given in the Case. Grygier felt that while reference to Wowor & Ng (2007) might satisfy Article 13.1.1 of the Code, there is really no suggestion in the Case of the presence of a concise diagnosis in that paper, either. A diagnosis would be preferable to 'morphological and morphometric datasets' from which differences might be gleaned. Apart from this, he wondered why the former holotype of *M. rosenbergii* was not chosen to be the holotype of *M. wallacei* and also whether the designated specimen was described and illustrated in detail by Wowor & Ng (2007). Kottelat said he voted FOR, only because of the commercial importance of the species. Kullander also voted FOR, stating that for all practical purposes, this seemed to be a supportable case, although he would have preferred the neotype to have been based on a recently collected, well preserved specimen with precise locality data. He also observed that the proposed specimen cannot come 'as near as practicable' from the original type-locality because the reason for its designation was to solve a geographic incongruence. Winston said that she voted FOR, as it was a sensible course in the case of this commercially important species.

Kojima, voting AGAINST, said he had difficulty understanding why the authors of the case (Wowor & Ng) who were also the authors of an excellent taxonomic paper (Wowor & Ng, 2007) made a proposal that, if it were approved, would require complicated treatment of the name-bearing type specimens and that might result in a more confusing situation, rather than keeping *rosenbergii* and *dacqueti* as they were. The purpose of this proposal was to conserve the usage of *Macrobrachium rosenbergii* (de Man, 1879) for a commercially important giant freshwater prawn. However the present case did not seem to correspond to the case in which 'the existing name-bearing type of a nominal species-group taxon is not in taxonomic accord with the prevailing usage of names and that the stability or universality is threatened thereby' (Article 75.6). Before Wowor & Ng's (2007) taxonomic work, the two species, one that is widely fished in South and Southeast Asia and extensively cultured in Asia,

America and Africa, and the other that is less commercially important and restricted in its distribution to the east of Huxley's Line, had been treated as a single species under the name *Macrobrachium rosenbergii* (de Man, 1879). Wowor & Ng's 2007 paper clearly showed that they are distinct species and the name for the former is *Macrobrachium dacqueti* (Sunier, 1925) and that for the latter is *Macrobrachium rosenbergii* (de Man, 1879). Kojima felt that such a change of names could easily be traced and would not cause any serious confusion.

Original reference

The following is the original reference to the name placed on an Official List by the ruling given in the present Opinion:

rosenbergii, *Palaemon*, De Man, 1879, *Notes from the Royal Zoological Museum of the Netherlands at Leyden*, 1(3), Note 41: 167.

OPINION 2254 (Case 3399)***Dichochrysa* Yang, 1991 (Insecta, Neuroptera): generic name not conserved**

Abstract. The Commission has ruled that the application for the proposed conservation of the green lacewing generic name *Dichochrysa* Yang, 1991 (a replacement name for *Navasius* X.-k. Yang & C.-k. Yang, 1990) by making the name *Navasius eumorphus* Yang & Yang, 1990 available, is not approved. The priority of the generic name *Pseudomallada* Tsukaguchi, 1995 (type species: *Chrysopa cognatella* Okamoto, 1914, by original designation) is maintained.

Keywords. Nomenclature; taxonomy; Neuroptera; CHRYSOPIDAE; *Navasius*; *Dichochrysa*; *Pseudomallada*; green lacewings; antlions; Afrotropical; Nearctic; Oriental; Palearctic.

Ruling

- (1) It is hereby ruled that the application for the proposed conservation of the name *Dichochrysa* Yang, 1991 is not approved.
- (2) No names are placed on the Official Lists or Indexes in this ruling.

History of Case 3399

An application to conserve the name *Dichochrysa* Yang, 1991 for a widespread and speciose genus of Old and New World green lacewings, by ruling that the name *Navasius eumorphus* is available from its publication by Yang & Yang (1990) was received from J. Oswald (*Texas A&M University, College Station, TX, U.S.A*) on 1 November 2006. After correspondence the case was published in BZN 65: 178–182 (September 2008). The title, abstract and keywords of the case were published on the Commission's website. No comments were received on this case.

Decision of the Commission

On 1 September 2009 the members of the Commission were invited to vote on the proposals published in BZN 65: 181. The case received a majority of the votes cast but failed to reach the required two-thirds majority (14 votes FOR and 13 votes AGAINST). In accordance with Bylaw 35 the case was sent for a revote.

On 2 March 2010 the members of the Commission were invited to vote again on the proposals published in BZN 65: 181. At the close of the voting period on 2 June 2010 the votes were as follows:

Affirmative votes – 9: Fautin, Grygier, Halliday, Krell, Pape, Papp, Patterson, Winston and Yanega.

Negative votes – 16: Alonso-Zarazaga, Ballerio, Bogutskaya, Bouchet, Brothers, Harvey, Kojima, Kottelat, Kullander, Lamas, Lim, Minelli, Ng, Rosenberg, Štys and van Tol.

Zhou abstained. Pyle and Zhang were on leave of absence.

Five Commissioners all made similar comments in the first round of voting. Bouchet, voting AGAINST, said that since the names involved were established so recently (less than 20 years ago for *Navasius* Yang & Yang, 1990), he favoured a rigid application of the Code. Kojima, voting AGAINST, expanded on the same theme and said that even though *Dichochrysa* was widely used and the validation of *Pseudomallada* Tsukaguchi, 1995 resulted in the creation of new combinations for approximately 140 species, this would not result in serious problems for the neuropterid taxonomic community if this issue was handled properly. Yang & Yang (1990), Yang (1991), Yang (1997) and Yang et al. (1999) ignored or did not follow the provisions of the Code; if we tried to work within the Code, exceptional cases that request use of the plenary power of the Commission should be minimal. The species-group names were still available and valid based on Article 11.9.3.1 of the Code. The neuropterid taxonomic community needed to accept the creation of new combinations for approximately 140 species; unless there were many secondary homonyms, such a treatment would not be difficult to accept. Kottelat, voting AGAINST, also said that the case concerned only very recent names and the situation could have been avoided if authors had paid minimum attention to the requirements of the Code. He felt that approving this application would mean endorsing poor practices. Ng, voting AGAINST, expressed a similar perspective and said that as much as he respected the views of the several authorities and the specialist community involved, he did not see any immediate or long term negative consequences of merely using the name *Pseudomallada* Tsukaguchi, 1995. He felt that taxonomists could easily cope with any resulting short-term confusion. The fact that the species in question do not have a substantial broad-based impact for the rest of the biological community weighed heavily in his opinion. Yanega, voting AGAINST, said that *Pseudomallada* was validly published, available, and in use. As the oldest available replacement name, it should continue to be used, and *Dichochrysa* was better off not resurrected.

Similar perspectives were expressed again in the second round of voting. Voting AGAINST, Alonso-Zarazaga commented that since *Pseudomallada* had been in use since its description in 1995 and *Dichochrysa* was unavailable, the valid name was the former, no matter how 'deeply entrenched' the latter name had become in chrysopid literature in just a few years. He felt this only pointed to a lack of interest on nomenclatural aspects by its users. The creation of both names was too recent and made under a recent edition of the Code; a correction now was timely and feasible. He felt strongly that the Code was not to be used to perpetuate recent nomenclatural mistakes and irregular practices on the part of authors. These were not names used of old, and they were of interest for a minimal part of the zoological community.

No names are placed on the Official List and Indexes.

OPINION 2255 (Case 3420)

Buettneria Case, 1922 (Amphibia): generic name not conserved

Abstract. The Commission has ruled that the application for the proposed conservation of the name of the Triassic amphibian genus *Buettneria* Case, 1922 by suppression of the names *Buettneria* Karsch, 1889, for a genus of extant orthopteran insects, and *Buettneria* Simroth, 1888, for a genus of African land snails, is not approved.

Keywords. Nomenclature; taxonomy; Amphibia; Orthoptera; Mollusca; *Buettneria*; *Koskinonodon*; *Buettneria perfecta*; West Africa; west Texas; Triassic; fossil; cricket; gastropod.

Ruling

- (1) It is hereby ruled that the application for the proposed conservation of the generic name *Buettneria* Case, 1922 is not approved.
- (2) No names are placed on the Official Lists or Indexes in this ruling.

History of Case 3420

An application to conserve the name of the Triassic amphibian genus *Buettneria* Case, 1922, by suppression of *Buettneria* Karsch, 1889, an extant orthopteran insect, was received from S.G. Lucas, L.F. Rinehart, J.A. Spielmann and A.P. Hunt (*New Mexico Museum of Natural History, Albuquerque, NM, U.S.A.*) on 15 November 2007. After correspondence the case was published in BZN **64**: 252–254 (December 2007). The title, abstract and keywords of the case were published on the Commission's website. Comments (supporting and opposing) were published in BZN **65**(1): 60–62, **65**(3): 217–219 (with an additional set of proposals, p. 218), **65**(4): 310–314, **66**(1): 76–78. The additional set of proposals addressed the senior homonym *Buettneria* Simroth, 1888.

Decision of the Commission

On 2 March 2010 the members of the Commission were invited to vote on the proposals published in BZN **64**: 253 and BZN **65**: 218. At the close of the voting period on 2 June 2010 the votes were as follows:

Affirmative votes – 7: Grygier, Halliday, Ng, Papp, Winston, Yanega and Zhou.

Negative votes – 19: Alonso-Zarazaga, Ballerio, Bogutskaya, Bouchet, Brothers, Fautin, Harvey, Kojima, Kottelat, Krell, Kullander, Lamas, Lim, Minelli, Pape, Patterson, Rosenberg, Štys and van Tol.

Pyle and Zhang were on leave of absence.

Grygier said he voted FOR mainly on account of the demonstrated wide use of the name *Buettneria* for the fossil amphibian and the potential threat to stability and universality posed by its senior homonyms (whereby, despite certain subsequent Comments, the authors had properly brought this matter to the attention of the

Commission under Article 23.9.3). He also felt that the proposal by Mueller (2007) to employ *Koskinonodon* as a 'replacement name' (actually a substitute name) was not formulated as well as it might have been. Under Article 23.3.5, the name chosen to replace a junior homonym must be the next oldest available and not otherwise invalid name from among its synonyms, if any. *Koskinonodon* is such a junior subjective synonym, but Mueller chose it over the simultaneously published additional synonym *Borborophagus* on grounds of page priority and the better condition of the material of the type species of the former genus. Neither of these is a valid criterion of priority, but Mueller's act could be interpreted as that of a first reviser. It is not clear, however, whether he was truly the first to confront this choice, or whether some earlier reviser among the many authors treating these genera had perhaps already assigned priority the same way or the opposite. Making *Buettneria* available for this amphibian is preferable to enforcing a change when *Koskinonodon* is only presumed, and not fully demonstrated, to be the proper substitute name. Ng also voted FOR, but qualified this by saying it would have been cleaner if one of the recent revisers had applied Article 23.9.1 to conserve the junior name. As things were now, he was in support of keeping the more recent name as it has wider usage.

Harvey, voting AGAINST, said his reasons for opposing this application rested on two issues: (1) Article 29.3.1.1 had not been met, despite meaningless uses of the term 'virtual nomen oblitum' and (2) he did not see a solution to deal with BUETTNERIINI Schileyko, 2002, which would need to be replaced if the proposal were accepted. Voting AGAINST, Kojima said this case was rather poorly prepared. For example, in the original proposal *Buettneria* Simroth, 1888 was not referred to even though the name is in the *Nomenclator Zoologicus*. As Hausdorf commented, *Buettneria* Case, 1922, could be replaced by *Koskinonodon* Branson & Mehl, 1929, as proposed by Mueller (2007) without threatening the stability or universality of nomenclature. Kojima also noted, as evidence of a nomenclatural change making its way into popular sources, that Wikipedia used *Koskinonodon* with the note 'formerly *Buettneria*'. Krell, voting AGAINST, said that there was no such concept as a 'virtual nomen oblitum'. The names considered by the authors of this Case to be 'virtual nomina oblita' were just much less frequently used, due to less attention gained by the taxon in question. He agreed with the sentiments of Bouchet (BZN 66: 77–78) that declaring names 'virtual nomina oblita' just because the taxon in question was treated in the literature at a rather normal frequency for invertebrate taxa, which was much lower than that for higher-profile fossils, was inappropriate. Excluding Kirby (1906) and Griffini (1908) from determining usage for *Buettneria* Karsch according to Article 23.9.6 flawed. Griffini (1908, p. 80) described *Buettneria maculiceps* for the first time in a detailed way, including measurements and locality. Kirby (1906) was a standard reference at the time, containing exact references, synonymy and distribution data. Neither of these references qualified for the exclusions mentioned in Article 23.9.6. Štys, voting AGAINST, said it is surprising how a seemingly simple proposal (and its modification) solicited so many relevant and irrelevant arguments pro and contra. His stance was in full concurrence with those arguing against suppression of the two older homonyms, *Buettneria* Simroth, 1888 (Mollusca) and *Buettneria* Karsch, 1889 (Insecta) in favour of the most junior homonym *Buettneria* Case, 1922, namely with Hausdorf (BZN 65: 61–52), Mueller (BZN 65: 217), Milner (BZN 66: 76–77) and Bouchet (BZN 66: 77–78) who aptly explained the universality

of bias in citation rate of names of vertebrate and invertebrate genera involved. Štys said he too had been unfavourably impressed by unmistakable symptoms of 'vertebrate superiority' involved in arguing, by usage of an *ad hoc* newly coined, unexplained, meaningless and misleading term 'virtual nomen oblitum, as well as by derogatory usage of the phrase 'obscure name' for names rarely cited (see Bouchet, BZN 66: 77–78).

No names are placed on the Official Lists or Indexes.

OPINION 2256 (Case 3446)***Anolis chrysolepis* Duméril & Bibron, 1837 (Reptilia, Squamata): precedence given over *Draconura nitens* Wagler, 1830**

Abstract. The specific name *Anolis chrysolepis* Duméril & Bibron, 1837 is conserved for a polytypic species of lizard that is geographically widespread in northern South America. The name was threatened by the name *Draconura nitens* Wagler, 1830 currently used as a senior synonym of *Anolis chrysolepis* Duméril & Bibron, 1837. The Commission has given precedence to the name *Anolis chrysolepis* Duméril & Bibron, 1837, over the name *Draconura nitens* Wagler, 1830, whenever the two are considered to be synonyms.

Keywords. Nomenclature; taxonomy; Reptilia; Squamata; POLYCHROTIDAE; *Anolis*; *Draconura*; *Anolis chrysolepis*; *Draconura nitens*; lizards; South America.

Ruling

- (1) Under the plenary power it is hereby ruled that the name *chrysolepis* Duméril & Bibron, 1837, as published in the binomen *Anolis chrysolepis*, is given precedence over the name *nitens* Wagler, 1830, as published in the binomen *Draconura nitens*, whenever the two are considered to be synonyms.
- (2) The following names are hereby placed on the Official List of Specific Names in Zoology:
 - (a) *chrysolepis* Duméril & Bibron, 1837, as published in the binomen *Anolis chrysolepis* and as defined by the lectotype (MHNP 2436, Mana, French Guiana) designated by Vanzolini & Williams (1970), with the endorsement that it is to be given precedence over the name *nitens* Wagler, 1830, as published in the binomen *Draconura nitens*, whenever the two are considered to be synonyms;
 - (b) *nitens* Wagler, 1830, as published in the binomen *Draconura nitens*, with the endorsement that it is not to be given priority over the name *chrysolepis* Duméril & Bibron, 1837, as published in the binomen *Anolis chrysolepis*, whenever the two are considered to be synonyms.

History of Case 3446

An application to give the name *Anolis chrysolepis* Duméril & Bibron, 1837 precedence over the name *Draconura nitens* Wagler, 1830, for a polytypic species of South American anoles of biogeographic importance, was received from Charles W. Myers (*American Museum of Natural History, New York, NY, U.S.A.*) on 28 December 2007. After correspondence the case was published in BZN 65: 205–213 (September 2008). The title, abstract and keywords of the case were published on the Commission's website. One supporting comment was published in BZN 66: 78.

Decision of the Commission

On 1 December 2009 the members of the Commission were invited to vote on the proposals published in BZN 65: 211. At the close of the voting period on 1 March 2010 the votes were as follows:

Affirmative votes – 22: Alonso-Zarazaga, Ballerio, Brothers, Fautin, Grygier, Halliday, Harvey, Kojima, Krell, Lamas, Lim, Minelli, Patterson, Pape, Papp, Rosenberg, Štys, van Tol, Winston, Yanega, Zhang and Zhou.

Negative votes – 4: Bogutskaya, Kottelat, Kullander and Ng.

Bouchet ABSTAINED. Pyle was on leave of absence.

Voting FOR, Grygier noted a formal point, that the Case stated that it was submitted in part under Article 23.6. While this Article is crucial to the arguments of the Case, it itself does not call for any matter to be referred to the Commission, so its citation at the head of the abstract was not necessary. Winston voted FOR and commented that although the nomen dubium may be little used, was used enough to be a cause of instability.

Voting AGAINST, Bogutskaya observed that the case as it was presented did not need any special ruling by the Commission, but could be solved by taxonomic means. She noted that the author clearly showed that the original description of the species *Draconura nitens* Wagler, 1830 ‘might prove diagnostic’ (which is repeated throughout the text), but no species that matched the diagnosis had been found to date. Furthermore, the author provided irrefutable reasoning that *Anolis chrysolepis* was a different species and that the synonymy was erroneous. Thus, if the two names were not considered to be synonyms by an expert (who presumably will publish his opinion in a taxonomic paper), no Commission intervention is required. Kottelat, voting AGAINST, explained that he felt: (1) *nitens* is poorly described, has a very vague type locality and apparently no type (the application does not explain what happened to it). The problem had been known since 1970. If a neotype had been designated at that time, the ‘instability’ would now be history. It should be done now and today’s instability would be history in ten years; (2) *Anolis chrysolepis* is said to be a polytypic species. This means that under many species concepts *A. chrysolepis* and *A. nitens* (by appropriate selection of a neotype) could be distinct species and the problem would no longer exist (except for authors using a concept needing the subspecies rank); (3) The proposed conditional suppression bears intrinsic instability, especially in the case of ‘polytypic’ species with a name valid or invalid depending on the species concept used. Even with conditional suppression, the problem remains as long as there is no neotype designation. Kullander, also voting AGAINST, said that the taxonomy of this group seemed so confused anyway, with a myriad of subspecies to be used for supporting the refugium hypothesis (as explained in paragraph 26). Without a neotype (or other name-bearing type) for *Anolis nitens* there was no case to answer, and he felt it was possible for a vote to be positive. Ng, voting AGAINST, said that although the case was well explained he saw a simpler solution to the *Anolis* mess by simply selecting an appropriate neotype specimen for *Draconura nitens* Wagler, 1830. That would ensure it did not become synonymous with *Anolis chrysolepis* Duméril & Bibron, 1837. Because the name *nitens* is not completely forgotten and is a well-known nomen dubium, prudent neotype selection would sort this out. Ng suggested that perhaps the type of *Anolis refulgens* Duméril & Bibron,

1837 could be made the neotype of *Draconura nitens* Wagler, 1830, making the latter the senior synonym. This action would automatically conserve the use of *Anolis chrysolepis* Duméril & Bibron, 1837, as it is generally used at present. Bouchet ABSTAINED, with the comment that he regretted that the proposals submitted for Commission vote were incomplete. He said that the name *Anolis chrysolepis* should clearly be conserved in view of its extensive usage, and this usage should come out fully Code-compliant as a result of the proposals. However, as a result of the proposal, the name *Draconura nitens* remained an available and potentially valid name, yet it was in taxonomic limbo. Without a name-bearing type it remained a nomenclatural hazard to other nominal species of *Anolis* from South America. He believed the name *Draconura nitens* should have been either (a) suppressed, or (b) stabilised by the designation of a neotype. Thus he did not approve the nomenclatural instability created by the proposals with regard to the name *nitens*, although he understood the intention to stabilise the name *chrysolepis*. As such he felt he could not vote for or against the proposals.

Original references

The following are the original references to the names placed on the Official Lists by the ruling given in the present Opinion:

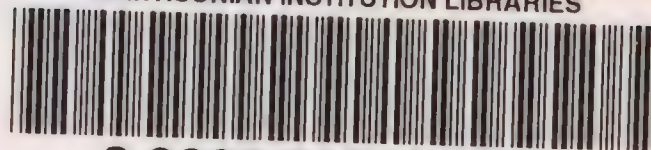
chrysolepis, *Anolis*, Duméril & Bibron, 1837, *Erpétologie général ou histoire naturelle complète des reptiles*, vol. 4, Librairie Encyclopédique de Roret, Paris, p. 94.

nitens, *Draconura*, Wagler, 1830, *Natürliches System der Amphibien, mit vorangehender Classification der Säugthiere und Vögel*, vi, 9 folio pls. J.G. Cotta, Munich, p. 149.

OPINION 2256 (Case 3446) *Anolis chrysolepis* Duméril & Bibron, 1837 (Reptilia,
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Towards Stability in the Names of Animals – a History of the International Commission on Zoological Nomenclature 1895–1995. (1995). R.V. Melville. (ISBN 0 85301 005 6) (Hardcover) Price includes Air Mail postage	£15	€20	\$25

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The Bulletin of Zoological Nomenclature

The Official Periodical of the
International Commission
on Zoological Nomenclature



THE BULLETIN OF ZOOLOGICAL NOMENCLATURE

The *Bulletin* is published four times a year for the International Commission on Zoological Nomenclature by the International Trust for Zoological Nomenclature, a registered charity (no. 211944) based in the U.K. The annual subscription for 2011 is £200 or US\$340 or €280, postage included; individual subscribers for personal use are offered a subscription of £100 or US\$170 or €140. All manuscripts, letters and orders should be sent to:

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International Commission on Zoological Nomenclature

Natural History Museum

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Cover image: *Cyanea annasethe* (Haeckel, 1879), a scyphomedusa illustrated by Ernst Haeckel in *Kunstformen der Nature*, plate 8, fig. 1 as “*Desmonema Annasethe*” (an enhanced image of “*Desmonema Annasethe*” previously figured by the same author in *Das System der Medusen*, plate XXX, fig. 1).

BULLETIN OF ZOOLOGICAL NOMENCLATURE

Volume 67, part 4 (pp. 269–366)

20 December 2010

Notices

(1) Applications and correspondence relating to applications to the Commission should be sent to the Executive Secretary at the address given on the inside of the front cover and on the Commission website. English is the official language of the *Bulletin*. Please take careful note of instructions to authors (present in a one or two page form in each volume and available online (at <http://iczn.org/content/guidelines-case-preparation>) as incorrectly formatted applications will be returned to authors for revision. The Commission's Secretariat will answer general nomenclatural (as opposed to purely taxonomic) enquiries and assist with the formulation of applications and, as far as it can, check the main nomenclatural references in applications. Correspondence should be sent by e-mail to 'iczn@nhm.ac.uk' where possible.

(2) The Commission votes on applications eight months after they have been published, although this period is normally extended to enable comments to be submitted. Comments for publication relating to applications (either in support or against, or offering alternative solutions) should be submitted as soon as possible. Comments may be edited (see instructions for submission of comments at <http://iczn.org/content/instructions-comments>).

(3) Requests for help and advice on the Code can be made direct to the Commission and other interested parties via the Internet. Membership of the Commission's Discussion List is free of charge. You can subscribe and find out more about the list at <http://list.afriherp.org/mailman/listinfo/iczn-list>.

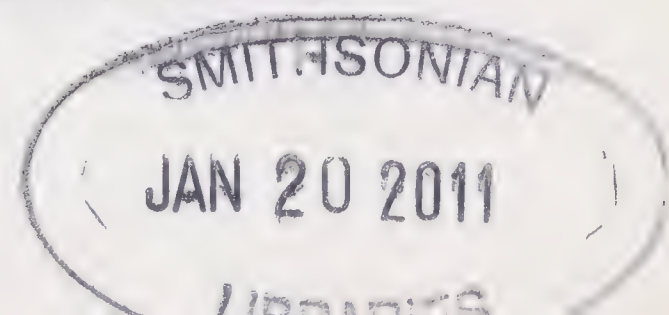
(4) The Commission also welcomes the submission of general-interest articles on nomenclatural themes or nomenclatural notes on particular issues. These may deal with taxonomy, but should be mainly nomenclatural in content. Articles and notes should be sent to the Executive Secretary.

New applications to the Commission

The following new applications have been received since the last issue of the *Bulletin* (volume 67, part 3, 30 September 2010) went to press. Under Article 82 of the Code, the existing usage of names in the applications is to be maintained until the Commission's rulings on the applications (the Opinions) have been published.

CASE 3534: *Terebella infundibulum* Renier in Meneghini, 1847 (currently *Myxicola infundibulum*; Annelida, Polychaeta): proposed conservation of the specific name. A.I. Muir & M.E. Petersen.

CASE 3535: *Nereis coccinea* Renier in Meneghini, 1847 (currently *Lumbrineris coccinea*) and *Thalassema scutatum* Renier in Ranzani, 1817 (currently *Sternaspis scutata*; Annelida, Polychaeta): attribution of authorship. A.I. Muir & M.E. Petersen.



CASE 3536: *Stegosaurus* Marsh, 1877 (Dinosauria, Ornithischia): proposed designation of *Stegosaurus stenops* Marsh, 1887 as the type species. P.M. Galton.

CASE 3537: ATHETINI Casey, 1910 and GEOSTIBINA Seevers, 1978 (Insecta, Coleoptera, STAPHYLINIDAE, ALEOCHARINAE): proposed conservation. V.I. Gusarov.

CASE 3538: CORYNINAE Benson, 1938 (Insecta, Hymenoptera, CIMBICIDAE): proposed emendation of spelling to CORYNISINAE to remove homonymy with CORYNIDAE Johnston, 1836 (Cnidaria, Anthoathecata). S.M. Blank & M. Forshage.

CASE 3539: *Sturmia* Robineau-Desvoidy, 1830, *Senometopia* Macquart, 1834 and *Drino* Robineau-Desvoidy, 1863 (Insecta, Diptera, TACHINIDAE): proposed conservation of usage. J.E. O'Hara & N.L. Evenhuis.

CASE 3540: AMPHIPORIDAE Rukhin, 1938 (Porifera, Amphiporida) and AMPHIPORIDAE McIntosh, 1873 (Nemertea, Hoplonemertea): proposed removal of homonymy. H. Özdikmen & H. Demir.

CASE 3541: Replacement of the family-group name METINAE Simon, 1894 (Arachnida, Araneae, TETRAGNATHIDAE), currently in homonymy with METIDAE Boeck, 1872 (Crustacea, Copepoda). F. Álvarez-Padilla & G. Hormiga.

CASE 3542: *Trachelus* Jurine, 1807 (Hymenoptera, CEPHIDAE): proposed precedence over *Astatus* Panzer [1801]. S.M. Blank & A. Taeger.

Page charges – new policy

The costs of publishing the BZN now require us to request page charges of £30 per page for all Cases, General Articles and Comments that are one full printed page or longer. We do not want to discourage contributions to the work of the Commission, thus a waiver is available for authors who are unable to pay. A waiver form is available on the ICZN website and should be signed by you, provide contact information for your head of department if you are in a professional position, and include a brief explanation of why you are unable to help support publication costs. Examples of appropriate waiver considerations include authors in unwaged positions or in countries with currency exchange difficulties. If a waiver is not received and approved at the time of acceptance of your contribution for publication, you will be sent an invoice for your page costs. Payment can be accepted by PayPal, credit card or cheque.

ZooBank Progress Report

Frank-T. Krell (Chair ZooBank Committee)

Department of Zoology, Denver Museum of Nature & Science, Denver, Colorado, U.S.A. (e-mail: Frank.Krell@dmns.org)

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Less than three years after the idea of an authoritative registry for all animal names under responsibility of the ICZN was presented in *Nature* (Polaszek et al., 2005) and during a symposium at the 2005 Annual Meeting of the Entomological Society of America (Krell & Polaszek, 2006), a prototype of ZooBank was released on 1 January 2008 (Pyle & Michel, 2008, 2010), which included 4,819 retrospectively registered names established by Linnaeus in *Systema Naturae* (1758), as well as five prospectively registered names established in Pyle et al. (2008). Since then the ZooBank Registry has grown to include 29,392 published works authored by 11,802 authors, containing 73,245 nomenclatural acts.

At the 2008 ICZN meeting at the International Congress of Zoology in Paris, a ZooBank Committee was formed and put in charge of the development and implementation of ZooBank (Anonymous, 2008). Currently, the ZooBank Committee consists of 30 members from 14 countries. Twenty members are ICZN Commissioners, nine are external experts, and the ICZN Executive Secretary is a member ex officio:

Donat Agosti, *Plazi, Bern, Switzerland*

Miguel A. Alonso-Zarazaga, *Museo Nacional de Ciencias Naturales, Madrid, Spain*

Alberto Ballerio, *Brescia, Italy*

Stan Blum, *California Academy of Sciences, San Francisco, U.S.A.*

Nina G. Bogutskaya, *Zoological Institute, St. Petersburg, Russia*

Denis J. Brothers, *University of KwaZulu-Natal, Scottsville, South Africa*

Edward C. Dickinson, *Eastbourne, U.K.*

Daphne G. Fautin, *University of Kansas, Lawrence, U.S.A.*

R. Bruce Halliday, *CSIRO Entomology, Canberra, Australia*

Mark S. Harvey, *Western Australian Museum, Welshpool, Australia*

Paul Kirk, *Centre for Agricultural Bioscience International, Egham, U.K.*

Maurice Kottelat, *Cornol, Switzerland*

Frank-T. Krell (Chair), *Denver Museum of Nature & Science, Denver, U.S.A.*

Sven O. Kullander, *Naturhistoriska Riksmuseet, Stockholm, Sweden*

Susan Lim, *University of Malaya, Kuala Lumpur, Malaysia*

Chris H.C. Lyal, *The Natural History Museum, London, U.K.*

Ellinor Michel, *ICZN, London, U.K.*

Thomas Pape, *Natural History Museum of Denmark, Copenhagen, Denmark*

David J. Patterson, *Marine Biological Laboratory, Woods Hole, U.S.A.*

Andrew Polaszek, *The Natural History Museum, London, U.K.*

Richard L. Pyle, *Bishop Museum, Honolulu, U.S.A.*

David Remsen, *Global Biodiversity Information Facility Secretariat, Copenhagen, Denmark*

Gary Rosenberg, *Academy of Natural Sciences, Philadelphia, U.S.A.*

Michael T. Schmitt, *Universität Greifswald, Germany*

Jan van Tol, *National Museum of Natural History Naturalis, Leiden, The Netherlands*

Judith E. Winston, *Virginia Museum of Natural History, Martinsville, U.S.A.*

Doug Yanega, *University of California, Riverside, U.S.A.*

Yde de Jong, *Zoological Museum Amsterdam, Amsterdam, The Netherlands*

Zhi-Qiang Zhang, *New Zealand Arthropod Collection, Auckland, New Zealand*

Hong-zhang Zhou, *Institute of Zoology CAS, Beijing, China*

To continue to refine the development of ZooBank as a user-friendly, comprehensive service with a fail-safe registration interface, two major steps needed to take place:

- (1) Formal policies and guidelines for the registration of authors, published works, nomenclatural acts (including new names), and type specimens needed to be drafted.
- (2) Funding for the further development of the ZooBank database and user interface had to be obtained.

ZooBank Policies

The first task of the ZooBank Committee was to determine how we should establish our guidelines (policies) in a transparent and democratic way. The first policy, regulating how we establish policies, was ratified on 27 July 2010 after public discussion in 2009, Committee vote in 2009, discussion and vote of the whole Commission, and vote by the ICZN Council on the final version. This ZooBank Policy 001 is published at the end of this report.

To organise the workload, the following working groups have been established:

- ZooBank architecture (Pyle [Leader], Agosti, Blum, Fautin, de Jong, Kirk, Patterson, Remsen)
- ZooBank users (Krell [L], Fautin, Pyle)
- Registration of new names (Agosti [L], Ballerio, Brothers, Halliday, Harvey, Lim, Lyal, Remsen, Winston, Yanega)
- Registration of substitute names (Halliday [L], Dickinson, Pape, Pyle)
- Registration of lectotypifications (Brothers [L], Bogutskaya, Lyal, Pape, Winston)
- Registration of neotypifications (Brothers [L], Bogutskaya, Lyal, Pape, Winston)
- Registration of first reviser actions (Dickinson [L], Brothers, Halliday, Lim, Lyal, Pape, Schmitt, Winston, Yanega)
- Registration of emendations and secondary spellings (Pape [L], Dickinson, Halliday, Yanega)
- Registration of Official Lists (Alonso-Zarazaga [L], Fautin, Lyal, Schmitt)

- Registration of authors and works (Schmitt and Winston [L], Bogutskaya, Krell, Kullander, Lim, Pyle, Zhou).

Working groups on the registration of types and type localities, registration before publication, and the differences between prospective and retrospective registration will be established soon.

In addition to the policy teams, a working group explores the protection of the name ZooBank and securing the relevant domain names (Dickinson, Ballerio, Michel).

The policies will guide the development of the ZooBank database and user interface, and help to identify Code Articles that need attention in respect to registration or general clarification. Drafts of most policies on registration have been submitted to the Committee Chair.

Funding for ZooBank development

Initial development of ZooBank was supported in part by two grants from the Global Biodiversity Information Facility (GBIF) and support from the Pacific Basin Information Node (PBIN) of the U.S. National Biological Information Infrastructure (NBII). Further development for ZooBank over the next three years will be supported in part by a grant from the U.S. National Science Foundation (DBI-0965415; US\$315,899), which itself is part of a US\$1.8M collaborative project to develop an electronic tagging and tracking system for biodiversity science collections. A significant portion of this grant is to develop and integrate components of the Global Names Architecture (GNA) into the tagging and tracking infrastructure. The GNA will become an open-access infrastructure designed to cross-link biodiversity data through scientific names (Patterson et al., 2010). A major part of the GNA is the Global Names Usage Bank (GNUB), a shared data index of 'Taxon Name Usage' (TNU) instances as they appear in published works and other documentation sources. TNU instances are the universal unit of all of taxonomy, representing the foundation for all assertions about how taxon names are used. A critical subset of the total universe of TNU instances are those particular instances that represent Code-governed nomenclatural acts. These include both the establishment of new taxon names in accordance with the Code, as well as subsequent Code-governed nomenclatural acts that have nomenclatural bearing on the use of scientific names. As such, the highest priority for developing the GNUB is to represent all of the TNU instances that relate to Code-governed nomenclatural acts (including the establishment of new names), as well as the associated published works. The data model for GNUB is based on the data model developed for ZooBank. Indeed, the structure of GNUB was designed specifically to accommodate the data needs of ZooBank and other major nomenclators, such as Index Fungorum. The current vision for ZooBank is that it will operate as a nomenclatural registration and validation service that operates on top of the GNUB database, and will form a core component of the GNA (Pyle & Michel, 2009). Most of the actual data behind ZooBank will reside in the GNUB. As such, the development of GNA/GNUB through support from this NSF award represents a major advancement to the overall development of ZooBank. Additional support for development of the GNA (and ZooBank) is currently being sought.

Timeline

At an internal ZooBank meeting at the Denver Museum of Nature & Science on 6–7 May 2010, we decided a timeline of milestones that would allow ZooBank to be available in time to serve its role as registry as proposed in the Amendment on electronic publications (ICZN, 2008):

- December 2010 – Presentation of relevant ZooBank policies for public input via website and listservers; migration of ZooBank from existing data model to GNUB data model;
- March 2011 – ZooBank policies sent for vote to the ICZN; ZooBank user interface ready for review by Commission;
- April 2011 – ZooBank policies ratified and published on ZooBank webpage;
- May 2011 – ZooBank release for Commission use;
- July 2011 – ZooBank release to public;
- October 2011 – press deadline for policies to be published in final form in December BZN.

Outlook

In a rapidly changing research and publishing environment with electronic communication gaining a dominant role, ZooBank will be providing a stable, authoritative reference and archive for nomenclatural information (Krell, 2009). To ensure the appropriate functionality of ZooBank, the ZooBank Committee encourages the zoological community to follow and join the ongoing discussions about ZooBank procedures and policies. Email listservers such as Taxacom, iczn-list and Zoobank-list provide the forums for these discussions. Your input will help to ensure that ZooBank will provide the best possible service to the user community.

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ZooBank Policy

Title: Drafting and Ratification of ZooBank Policies

Policy Number: 001

Author(s): Richard L. Pyle

Status: DRAFT-V5

Date Review Completed: 29 October 2009

Date Recommended: 02 November 2009

Date Ratified: 27 July 2010

Effective Date: 28 July 2010

I. PURPOSE

This document defines the process for establishing ZooBank Policies.

II. POLICY

The ZooBank Committee (ZBC), as officially designated by the International Commission on Zoological Nomenclature (ICZN), shall draft a series of Policies that define the purpose, scope and function of the ZooBank online registry. Such Policies will be open for public review and presented to the ICZN for ratification. Upon ratification, the Policy will take effect as of the specified ‘Effective Date’ (which may be retroactive), and will thus become official ZooBank Policy, under the authority of the ICZN.

III. PROCEDURES

A. DRAFT POLICIES

1. Proposal of Policies

Any current member or group of members of the ZBC may propose a new ZooBank Policy. Suggestions for a new Policy by an individual who is not a member of the ZBC must be presented in collaboration with at least one ZBC member. New Policy proposals should be presented to the official ZBC email discussion list for informal comment and review.

2. Draft Policy Preparation

Pending initial comment and review by the ZBC, the original proposing ZBC members and/or other ZBC members may, at their own discretion, create a formal

draft Policy for submission and review by the ZBC and general public. The draft Policy should be created as an electronic document, following the standard ZooBank Policy template, and should include the following information:

- (i) **Title.** A short, descriptive title that succinctly but accurately characterizes the intended scope of the Policy.
- (ii) **Purpose.** A brief statement about the intended purpose of the Policy, specifying how it contributes to the purpose, scope, and/or function of ZooBank.
- (iii) **Policy.** A statement that describes the Policy in full, written as an overview that encompasses all main components of the Policy.
- (iv) **Procedures.** A detailed description, in outline form, of how the Policy is to be implemented.

3. Draft Policy Initial Review

The draft Policy shall be submitted to the ZBC for an initial review period, not to exceed 30 days. The ZBC members shall comment on specific aspects of the wording of the Policy, and discuss implementation details, possible unintended consequences, and any other implications the Policy may have for the successful functioning of ZooBank. If >50% of ZBC members responding to the Initial Review and expressing an opinion about public review are in favor of such review, the draft Policy shall be posted for public review on the ZooBank website.

4. Draft Policy Public Review

When a Policy has been posted for public review on the ZooBank website, announcements of the posting shall be made by the ZBC Chair or designated ZBC representative to appropriate email discussion groups, including (at minimum) the public ZooBank email list. The public review period shall be 30 days, unless the deadline for public review is extended by the ZBC Chair to allow time for additional commentary.

5. Draft Policy Recommendation

At the end of the public review period the Chair of the ZBC shall call for a vote by the ZBC members as to whether the draft Policy, as written and revised based on public commentary, should be recommended for approval by the ICZN. The deadline for vote submission shall be set for 30 days after the call for votes, and the vote shall be deemed valid either when at least two-thirds of ZBC members have voted in favor, when more than one-third of ZBC members have voted to oppose, or when all ZBC members have either cast a vote, explicitly abstained, or indicated an inability or unwillingness to vote. Only votes explicitly in favor or opposed shall be considered when calculating the percentage results.

- (i) **Approved.** If at least two-thirds of the votes received within the voting period are in favor, the draft Policy shall be forwarded to the ICZN for voting under the one-month rule as described in the Bylaws. Once ratified, the Policy shall be assigned an 'Effective Date' (i.e. the date on which the Policy officially goes into effect, which may be retroactive), and assigned a Policy Number. The Policy Number will be one more than that of the previously ratified Policy.

- (ii) **Declined.** If less than two-thirds of the votes received within the voting period are in favor, the draft Policy shall not be forwarded to the ICZN for ratification. If more than half (but fewer than two-thirds) of votes received within the voting period are in favour, review and discussion may continue (at the discretion of existing ZBC members) to further refine the draft Policy until such time as the Chair of the ZBC calls for another vote, which shall be conducted following the same procedures as the first vote. If the second vote is inconclusive the proposed Policy fails.

B. AMENDMENT OF RATIFIED POLICIES

Existing ZooBank Policies that have been ratified by the ICZN may be amended following the same procedures described above for Draft Policies, with the following additional aspects:

1. Proposal of Policy Amendment

Upon proposing the amended Policy to the ZBC, the proposing ZBC member(s) shall state the number of the existing Policy that is proposed to be amended.

2. Draft Policy Amendment Preparation

The Draft Policy Amendment may include alterations to the Title, Effective Date, Purpose, Policy, or Procedures of the existing ZooBank Policy.

3. Draft Policy Amendment Initial Review

In their deliberations of the Draft Policy Amendment, the ZBC members shall consider the implications of modifying an existing Policy on existing ZooBank registrations, and what effect (if any) such modifications might have on nomenclatural stability. If needed, the ZBC may also stipulate the disposition and status of the amended Policy during the period when the amendment is under consideration.

4. Draft Policy Amendment Public Review

When announcing the proposed amended Policy for public review, the original Policy shall be clearly indicated, and a statement of the implications the modifications might have on existing ZooBank registrations, and associated nomenclatural stability shall also be provided.

5. Draft Policy Amendment Recommendation

If the ZBC votes in favor of recommending the Draft Policy Amendment to the ICZN, the recommendation shall also include a statement of the implications the modifications might have on existing ZooBank registrations, and associated nomenclatural stability. Upon ratification of the Policy Amendment, the Amended Policy will receive an appropriate Policy Number revision (i.e. the original Policy Number with an incrementing decimal suffix representing revision number of the Policy) and revised Ratification Date. The Amended Policy shall take effect on its designated Effective Date, when the previous Policy will be deemed no longer to be in effect.

Contributions to the Discussion on Electronic Publication VI

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As co-editors of Journal of Natural History, one of the leading publishers of taxonomy and nomenclatural acts in zoology, we would like to make a comment and recommendation regarding the acceptance of electronic-only publication of such acts. We fully support the Commission's pioneering work in proposing an amendment to the Code, as published in the Bulletin of Zoological Nomenclature, Zootaxa and several other journals in October 2008. We are in full agreement that electronic-only publication of such acts must be allowed following the adoption of this amendment. There is no question that in just a few years hard copy publication of Journal of Natural History will cease altogether, as is the case with several existing journals. We also agree that mandatory registration of all electronic-only published acts in the ZooBank register should be required before any such acts can be considered valid. As co-editors, we are more than willing to implement mandatory registration on all acts published in this journal. We would hope that retrospective registration of all previous acts back to 1758 will follow shortly. We strongly support the adoption of this amendment and encourage rapid action to implement the amendment into the current Code.

Case 3525***Tricoelia variopedata* Renier, [1804] (currently *Chaetopterus variopedatus*; Annelida, Polychaeta): proposed conservation of the specific name**

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Abstract. The purpose of this application, under Article 81.1 of the Code, is, firstly, to conserve the widespread current usage of the name *Chaetopterus variopedatus*, which is used by polychaete taxonomists and ecologists around the world despite the fact that it is derived from the officially unpublished works of Renier. Furthermore, we request an amendment to the entry for Renier [1804b] in the Official Index of Works in Zoology to make it clear that some names in that unpublished work have been validated by the Commission.

Keywords. Nomenclature; taxonomy; Polychaeta; CHAETOPTERIDAE; *Chaetopterus variopedatus*; Adriatic.

1. The works known as Renier (1804a), Renier (1804b) and Renier (1807) have all been rejected for not being properly published; see Opinion 316 (Opinions and Declarations 9(5): 91–106, December 1954) and Opinion 427 (Opinions and Declarations 14(11): 281–310, October 1956). However, while some names established in those works have been explicitly rejected (e.g. *Amphinome coccinea* Renier, [1804] (Opinion 316); *Discoides* Renier, [1804] and *Scolixedion* Renier, [1804] (Opinion 436, Opinions and Declarations, 15(1): 1–24, January 1957); *Tricoelia* Renier, [1804], Opinion 427), some other names have been explicitly validated (e.g. *Cerebratulus marginatus* Renier, 1804 in Opinion 477 (Opinions and Declarations 16(20): 343–352, July 1957); *Polycitor crystallinus* Renier, 1804 in Opinion 478 (Opinions and Declarations 16(21): 353–364, July 1957); *Tubulanus polymorphus* Renier, 1804, Opinion 1486 (BZN 45(2): 157–158, June 1988). This application is one of three, which attempt to resolve confusion surrounding the names of polychaetes which ultimately derive from these unpublished works.

2. Gibin & Tiozzo (1981) state that Renier's [1804a, b] works were intended to be part of a larger work entitled *Prodromo di osservazione sopra alcuni esseri viventi, della classe dei vermi, abitanti nel mar Adriatico, nelle lagune e nei litorali veneti*. After his death, certain of Renier's notes and papers were gathered together and edited/updated by a small committee, with the 'principale compilatore ed ordinatore dell'Opera' being G. Meneghini. This work is cited here as Meneghini (1847).

***Tricoelia variopedata* (currently *Chaetopterus variopedatus*)**

3. The name *Tricoelia variopedata* is first found in Renier [1804b, p. 18]. The species was further described under that name in Meneghini (1847, pp. 33–40, 119, pl. 8). There are two versions of Meneghini's plate 8, one shaded but not labelled, the other labelled but not shaded. Both versions of the plate have the name TRICELIA VARIOPEDATA centered at the bottom of the page, below the figures. Tricelia is the Italian name for the genus *Tricoelia* – Renier often named his species in Latin, Italian and French, which has caused some confusion in the past. Meneghini (1847) also stated that the species *Chaetopterus pergamentaceus* Cuvier, 1830 and *Chaetopterus norvegus* (the incorrect subsequent spelling of *C. norvegicus* Sars, 1835, p. 47) belonged in the genus *Tricoelia* Renier, 1804.

4. The generic name *Chaetopterus* was erected by Cuvier (1830, p. 208) for one polychaete species – *Chaetopterus pergamentaceus* Cuvier, 1830 from the Antilles. *C. pergamentaceus* is the type species of the genus *Chaetopterus* by monotypy. The name *Chaetopterus* Schlegel in Temminck & Schlegel, 1844 was applied to a fish, which was described but not given a specific name (the first included fish species was probably *Chaetopterus sieboldii* Bleeker, 1854). This fish generic name is a junior homonym of the polychaete generic name and not considered further here.

5. Joyeux-Laffuie (1890) synonymised the nine European species of the polychaete genus *Chaetopterus* which had been erected by that date with *Chaetopterus variopedatus* (Rénier, 1804), and said that the six additional species from overseas that he knew of were probably also synonyms. Fauvel (1926) agreed and synonymised three later species with *C. variopedatus*. Hartman (1959, pp. 395–396) listed 22 specific names and one subspecific name as synonyms of *Chaetopterus variopedatus* and said in a note 'Most authors recognise a single species in the genus; the various specific names are sometimes retained to designate geographic populations but reliable specific distinctions have not been identified'.

6. *Chaetopterus variopedatus* has been erroneously quoted as the type species of *Chaetopterus* Cuvier, 1827 by Hartman (1959, 1968), Fauchald (1977) and Gilbert (1984). The references to *Chaetopterus* Cuvier, 1827 are a mistake probably derived from Hartman (1951), who refers to 'Griffith's Cuvier', a 16 volume work consisting of a translation of Cuvier's work from French to English, with additions by various other authors, published in parts between 1824 and 1835 (Cowan, 1969). *Chaetopterus* is mentioned in volume 13 pages 27–28 of 'Griffith's Cuvier', which is presumably in part 34 which was published in December 1832. This volume is listed in the references of this submission as Griffith & Pidgeon (1832–1833).

7. It is not now certain that *C. variopedatus* and *C. pergamentaceus* are synonymous. *Chaetopterus variopedatus* Renier, 1804, as understood from the references above, has been recognised as a species complex and work is under way to identify the constituent species (Petersen, 1984a, b, 1997; Osborn et al., 2007; Martin et al., 2008; Nishi et al., 2009). The name *C. pergamentaceus* has been used in 33 publications from 1945–2008, according to the Zoological Record Archive (<http://portal.isiknowledge.com/portal.cgi?DestApp=ZOOREC&Func=Frame>).

8. However, under Article 11 of the Code, whether *C. variopedatus* and *C. pergamentaceus* are recognised as separate species or regarded as synonymous, in which case *C. variopedatus* is to have priority over *C. pergamentaceus* in the interests of nomenclatural stability, *C. variopedatus* would require a new name, as *Tricoelia*

variopedata Renier, [1804b p. 18], is officially unpublished. *Chaetopterus variopedatus* attributed to Renier (1804) is reported from around the world (e.g. Fauvel, 1927; Uschakov, 1955; Gibbs, 1971; Day, 1973; Bellan, 1978; Hobson & Banse, 1981; Kirkegaard, 1981; Gilbert, 1984; Hartmann-Schröder, 1985, 1996; Huang, 2001; Simboura & Nicolaidou, 2001), and is often used in physiological/developmental work (a search of the ISI Web of Knowledge on <http://wos.mimas.ac.uk/> revealed 24 such papers with *Chaetopterus variopedatus* in their titles from 1981 to early 2006). It is also commonly used as an example in field guides and text-books (e.g. Campbell, 1976; Fish & Fish, 1996). These reports will represent many superficially similar species (see paragraph 8), but losing such a well-known species name would cause confusion among ecologists, physiologists and students around the world. Melville (1983) has already made a proposal regarding *T. variopedata* (although with wrong date and spelling of the generic name due to the confusion mentioned in para. 3 above), but this has not been voted on by the Commission.

9. The generic name *Tricoelia* Renier, [1804b, p.18], has been explicitly rejected by the Commission (Opinion 427). We are not asking the Commission to validate this generic name, as it would become a senior synonym of *Chaetopterus*. *Chaetopterus* Cuvier, 1830 is the type genus of the family CHAETOPTERIDAE, and if, following Article 40.1, the generic name were changed to *Tricoelia* but the family name remained CHAETOPTERIDAE, further confusion would be possible (cf. Pettibone, 1981; Melville, 1983).

The Official Index

10. The entries for Renier's works in the Official Index (Melville & Smith, 1987) are misleading in that they do not mention that some of the names contained therein have been validated, therefore implying that all the names are to be rejected, especially when compared to the entry for the rejected work of Brisson (1762) (see Smith (2001) which lists the available names found in that work). We consider that the entry for Renier, 1804b needs amending by the addition of a list to show that *Cerebratulus marginatus* Renier, 1804; *Polycitor crystallinus* Renier, 1804; *Tubulanus polymorphus* Renier, 1804 and *variopedata* as published in *Tricoelia variopedata* Renier, 1804, have all now been made available.

11. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to rule that the specific name *variopedata* as published in the binomen *Tricoelia variopedata* Renier, [1804b], is available from Renier (1804b);
- (2) to place on the Official List of Generic Names in Zoology the name *Chaetopterus* Cuvier, 1830 (gender: masculine), type species by monotypy *Chaetopterus pergamentaceus* Cuvier, 1830;
- (3) to place on the Official List of Specific Names in Zoology the following names:
 - (a) *variopedata* Renier, [1804b], as published in the binomen *Tricoelia variopedata* Renier, [1804b], and as ruled to be an available name in (1) above;
 - (b) *pergamentaceus* Cuvier, 1830, as published in the binomen *Chaetopterus pergamentaceus* Cuvier, 1830 (specific name of the type species of *Chaetopterus* Cuvier, 1830);

- (4) to amend the entry for Renier, [1804b], in the Official Index of Works in Zoology to record that the name *variopedata* as published in *Tricoelia variopedata* Renier, [1804b], is available from Renier, 1804b, as ruled in (1) above, and that *Cerebratulus marginatus* Renier, 1804; *Polycitor crystallinus* Renier, 1804 and *Tubulanus polymorphus* Renier, 1804 are available as shown in paragraph 1 of this Application.

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Acknowledgement of receipt of this application was published in BZN **67**: 120.

Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to the Executive Secretary, I.C.Z.N., c/o Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).

Case 3514**ENHYDRINI Régimbart, 1882 (Insecta, Coleoptera): proposed emendation of spelling to ENHYDRUSINI to remove homonymy with ENHYDRINI Gray, 1825 (Mammalia, MUSTELIDAE)**

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Abstract. The purpose of this application, under Articles 29 and 55.3 of the Code, is to remove the homonymy between the family-group ENHYDRINI Régimbart, 1882 (Insecta, Coleoptera) and ENHYDRINI Gray, 1825 (Mammalia, MUSTELIDAE) which are homonyms resulting from similarity of the names of their respective type genera, *Enhydrus* Laporte, 1834 and *Enhydra* Fleming, 1822. Both names are in use and are placed on the Official List of Generic Names in Zoology. It is proposed to change the spelling of the beetle family-group name to ENHYDRUSINI by emending the stem of the name of the type genus *Enhydrus* Laporte, 1834, while leaving the mammalian name, based on *Enhydra* Fleming, 1822, unchanged.

Keywords. Nomenclature; taxonomy; Mammalia; MUSTELIDAE; LUTRINAE; ENHYDRINI; *Enhydra*; Insecta; Coleoptera; GYRINIDAE; GYRININAE; *Enhydrus*; otters; beetles.

1. There is a known nomenclatural problem with the family-group name ENHYDRINI, as it has been applied to two different groups of animals (otters and whirligig beetles). The homonymy between both family-group names is the result of similarity of the names of their type genera (Article 55.3 of the Code). ENHYDRINI Régimbart, 1882 is based on *Enhydrus* Laporte, 1834 (p. 110) and is currently in use for a tribe of the subfamily GYRININAE (Coleoptera, GYRINIDAE). ENHYDRINI Gray, 1825 (Mammalia, MUSTELIDAE) is based on *Enhydra* Fleming, 1822 (p. 187), a monotypic genus containing the sea otter *Enhydra lutris* (Linnaeus, 1758).

2. The family-group name for sea otters was initially introduced by Gray (1825, p. 340) as ENHYDRINA. This spelling was subsequently corrected to ENHYDRINAE Gray, 1825 and the name was placed on the Official List of Family-Group Names in Zoology (Direction 53, Opinions and Declarations, 12: 456). It was used as ENHYDRINI Gray, 1825 by Sokolov (1973), Willemsen (1992, p. 62), Morlo & Kunderát (2001), Morales et al. (2005, p. 53), Pickford (2007, p. 122) and Haile-Selassie (2008).

3. *Enhydra* Fleming, 1822 is placed on the Official List of Generic Names in Zoology (Opinion 384, Opinions and Declarations 12: 71–190).

4. The name *Enhydrus* has a much more complex story. It was first used by Rafinesque (1815, p. 77) for a water snake but was considered to be an incorrect

subsequent spelling of *Enhydris* Latreille, [1802] and was placed on the Official Index of Rejected and Invalid Generic Names in Zoology (Opinion 710, BZN 21: 242–245, October 1964).

5. *Enhydrus* Dahl, 1823 was established for a genus of HYDROPHILIDAE (Insecta, Coleoptera). It was published in a work suppressed for nomenclatural purposes under the plenary power and which is placed on the Official Index of Rejected and Invalid Works in Zoology (Opinion 710, BZN 21: 242–245, October 1964).

6. MacLeay (1825, p. 35) established the name *Enhydrus* in the family HYDROPHILIDAE (Insecta, Coleoptera). It was suppressed and placed on the Official Index of Rejected and Invalid Names in Zoology (Opinion 710, BZN 21: 242–245, October 1964), following an application by Balfour-Browne & Brinck (1961, p. 137) who proposed conservation of *Enhydrus* Laporte, 1834 by suppression of *Enhydrus* MacLeay, 1825 and *Enhydrus* Dahl, 1823.

7. The coleopteran genus *Enhydrus* (type species *Gyrinus sulcatus* Wiedemann, 1821, p. 4) was established by Laporte (1834, p. 110) in the family GYRINIDAE. It is placed on the Official List of Generic Names in Zoology. The tribe ENHYDRINI was established by Régimbart, 1882. Folkerts (1979) divided GYRINIDAE into two subfamilies, GYRININAE Régimbart and SPANGLEROGYRINAE Folkerts. Most recently Beutel & Roughly (2005) used this classification. Four tribes are placed in GYRININAE: GYRININI Régimbart, ENHYDRINI Régimbart, ORECTOCHILINI Régimbart and HETEROGYRINI Brinck. Five genera assigned to ENHYDRINI are: *Enhydrus* Laporte (4 spp.), *Dineutus* MacLeay (79 spp.), *Andogyrus* Ochs (20 spp.), *Macrogyrus* Régimbart, (34 spp.) and *Porrorhynchus* Régimbart (5 spp.). *Enhydrus* Laporte is still used as a valid name in the tribe ENHYDRINI Régimbart, 1882 (Beutel, 1989; Oygur & Wolfe, 1991; Ribera et al., 2002; Beutel & Roughley, 2005; Beutel et al., 2006, 2008; Archangelsky & Michat, 2007; Majka, 2008; Majka & Kenner, 2009).

8. Guignot (1954, p. 45) proposed the replacement name *Prothydrus* for *Enhydrus* Laporte, 1834, which is a junior homonym of *Enhydrus* Dahl, 1823 (p. 34) and *Enhydrus* MacLeay, 1825 (p. 35). He also proposed a change of the subfamily name to PROTOHYDRINAE. This proposal was not accepted; the name *Prothydrus* Guignot, 1954 was placed on the Official Index of Rejected and Invalid Generic Names in Zoology, and the name PROTOHYDRINAE Guignot, 1954 was placed on the Official Index of Rejected and Invalid Family-Group Names in Zoology (Opinion 710, BZN 21: 242–245, October 1964).

9. However, it was discovered during the course of preparation of Opinion 710 that the family-group name ENHYDRINI Régimbart, 1882 proposed by Balfour-Browne & Brinck (1961) was a homonym of ENHYDRINI Gray, 1825 (Opinion 710, BZN 12, p. 244), and it was suggested that the question of a substitute for ENHYDRINI Régimbart, 1882 would be dealt with in another application to the Commission. Apparently this has never happened, and the problem has remained. McKenna & Bell (1997) followed by Morales & Pickford (2005, p. 235) re-introduced the question but no action has yet been taken.

10. *Enhydra* Fleming, 1822 is derived from the Greek ‘enhudris’, meaning an otter. *Enhydrus* Laporte, 1834 is derived from the Greek ‘enhudros’, meaning ‘living in water’.

11. It is not desirable to change the name ENHYDRINAE Gray, 1825 because it is placed on the Official List of Family-Group Names in Zoology and because it is widely used (e.g. Ingles, 1965, p. 481; Harrison, 1972, p. 334; Estes, 1980, p. 1; Rice, 1998; McKenna & Bell, 2000; Anthony, 2005, p. 181; Herrick, 2009, p. 85).

12. Such a case involving family-group names must be referred to the Commission for a ruling to remove homonymy under Article 55.3.1 of the Code. It is therefore proposed that the spelling of the coleopteran family-group name be changed to ENHYDRUSINI by emending the stem of the name of the type genus *Enhydrus* Laporte, 1834 to *Enhydrus*-, while leaving the mammalian family-group name, based on *Enhydra* Fleming, 1822, unchanged.

13. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to rule that for the purposes of Article 29 of the Code the stem of the generic name *Enhydrus* Laporte, 1834 is *Enhydrus*-;
- (2) to emend the entry on the Official List of Generic Names of Zoology for the name *Enhydrus* Laporte, 1834 to record that for the purposes of Article 29 of the Code the stem of the generic name *Enhydrus* Laporte, 1834 is *Enhydrus*-;
- (3) to place on the Official List of Family-Group Names in Zoology the name ENHYDRUSINI Régimbart, 1882, type genus *Enhydrus* Laporte, 1834 (spelling emended by the ruling in (1) above) (Insecta, Coleoptera);
- (4) to place on the Official Index of Rejected and Invalid Family-Group Names in Zoology the name ENHYDRINI Régimbart, 1882 (spelling emended to ENHYDRUSINI, as ruled in (1) above) (Insecta, Coleoptera).

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Acknowledgement of receipt of this application was published in BZN 67: 2.

Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to the Executive Secretary, I.C.Z.N., c/o Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).

Case 3529***Otiorhynchus* Germar, 1824 and *Loborhynchus* Schoenherr, 1823 (Insecta, Coleoptera): proposed emendation of entries on the Official List of Generic Names in Zoology**

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Abstract. The purpose of this application, under Article 80.4 of the Code, is to request the emendation of two entries in the Official List of Generic Names in Zoology: that for the genus *Otiorhynchus* Germar, currently stated to be dated 1824 with type species *Curculio clavipes* Bonsdorff, 1785, while it is known to have been proposed by Germar in 1822, with type species *Curculio rhacusensis* Germar, 1822 by monotypy; and that for the genus *Loborhynchus* Schoenherr, 1823, which should be *Loborhynchus* Dejean, 1821.

Keywords. Nomenclature; taxonomy; Coleoptera; *Otiorhynchus*; *Loborhynchus*; *Curculio rhacusensis*; *Curculio clavipes*; weevil.

1. Germar (1822, no. 12) described *Curculio rhacusensis* which, although he attributed it to Dejean, takes Germar's authorship since this is the first published description of the name. Germar proposed *Otiorhynchus* as a conditional genus to hold *C. rhacusensis* and other unspecified species. This is the first appearance of the genus name, and *Curculio rhacusensis* Germar, 1822, is the type species of *Otiorhynchus* Germar, 1822 by monotypy.

2. Germar (1824, p. 343) included several additional species in *Otiorhynchus*.

3. Schoenherr (1826, p. 16) selected one of the additional species included by Germar (1824), *Curculio clavipes* Bonsdorff, 1785, as the type species. This species is currently congeneric with *Curculio rhacusensis* Germar, 1822.

4. Reitter (1912, p. 48) correctly identified *Curculio rhacusensis* as the type species of genus *Otiorhynchus* (misspelled as *Otiorrhynchus*), possibly because Germar (1824) placed it at the top of his list of species.

5. *Otiorhynchus* Germar, 1824, has been placed on the Official List of Generic Names in Zoology (Opinion 982, BZN 29: 19–24, May 1972) with the type species *Curculio clavipes* Bonsdorff, 1785, suppressing several unused senior generic synonyms.

6. According to Article 23.1 of the Code, 'the valid name of a taxon is the oldest available name applied to it, unless that name has been invalidated or another name

is given precedence by any provision of the Code or by any ruling of the Commission'. As this is not currently the case, we consider that the entry in the Official List is misleading and there is no benefit in keeping it uncorrected. Alonso-Zarazaga & Lyal (1999, p. 168) already used the correct date and type species.

7. Another possible threat to the stability of the name *Otiorhynchus* has been identified in this study. Dejean (1821, p. 90) used the genus-group name *Loborhynchus* for the first time, as a synonym of *Pachygaster* Germar, 1817, mentioning Megerle as author. Published as a junior synonym, the name is therefore unavailable. However, Schoenherr (1823, c. 1145) used '*Loborhynchus* Megerle' as a replacement name for *Pachygaster* 'Germ. Dej.', a junior homonym of *Pachygaster* Meigen, 1803. Schoenherr (1823, c. 1145) designated *Curculio clavipes* Bonsdorff, 1785, as type species for *Loborhynchus*. Thompson (1970) noted that as a replacement name *Loborhynchus* Schoenherr should have the same type species as *Pachygaster*, but that Schoenherr had proposed a species that was not even originally included in that genus. Because of this, and because the name had fallen into disuse a century earlier, Thompson (1970) appealed for its suppression. Subsequently, the Commission ruled to place *Loborhynchus* Schoenherr, 1823, on the Official Index of Rejected and Invalid Generic Names in Zoology (Opinion 982, BZN 29: 19–24, May 1972).

8. Because Schoenherr (1823) used *Loborhynchus* Megerle (arguably the same as *Loborhynchus* Megerle cited by Dejean, and hence the same as *Loborhynchus* Dejean), *Loborhynchus* Dejean, 1821, is made available (Article 11.6.1 of the Code – a name published as a junior synonym treated before 1961 as an available name). Thus, whilst *Loborhynchus* Schoenherr, 1823, is suppressed, *Loborhynchus* Dejean, 1821, is not. Although no type species is yet validly selected for *Loborhynchus*, any choice from the species given in Dejean (1821) would cause *Loborhynchus* to have priority over *Otiorhynchus* or another equally established name.

9. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to place on the Official List of Specific Names in Zoology the name *rhacusensis* Germar, 1822, as published in the binomen *Curculio rhacusensis* (specific name of the type species of *Otiorhynchus* Germar, 1822);
- (2) to amend the entry in the Official List of Generic Names in Zoology for the genus *Otiorhynchus* as follows: *Otiorhynchus* Germar, 1822, *Fauna Insectorum Europae*, 7: no. 12 (gender: masculine) (type species by monotypy: *Curculio rhacusensis* Germar, 1822, *Fauna Insectorum Europae*, 7: no. 12);
- (3) to amend the entry in the Official Index of Generic Names in Zoology for the genus *Loborhynchus* as follows: *Loborhynchus* Dejean, 1821. *Catalogue de la collection de Coléoptères de M. le Baron Dejean*: 90 (type species not designated);
- (4) to amend the entry in the Official List of Specific Names in Zoology for *Curculio clavipes* Bonsdorff, 1785 to record that this is not the name of the type species of *Otiorhynchus* Germar, 1822.

Acknowledgments

We thank Richard Thompson (*Natural History Museum, London*) for his valuable advice.

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Acknowledgement of receipt of this application was published in BZN **67**: 198.

Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to the Executive Secretary, I.C.Z.N., c/o Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).

Case 3530

PLINTHINI Lacordaire, 1863 (Insecta, Coleoptera): proposed conservation and *Plinthus* Germar, 1817: proposed conservation by designation of *Curculio megerlei* Panzer, 1803 as the type species

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Abstract. The purpose of this application, under Articles 65.2 and 78.1 of the Code, is to conserve the current usage of the weevil generic name *Plinthus* Germar, 1817 and the family-group name PLINTHINI Lacordaire, 1863. These are threatened due to a misidentification and emended spelling of *Curculio meyerlaei* Fabricius, 1801 (ENTIMINAE) by Panzer (1803) and subsequent emendation of the spelling of the Fabrician species as *Curculio megerlei*. It is proposed that *Curculio megerlei* Panzer, 1803 be ruled to be an available name and designated as the type species of *Plinthus* Germar, 1817.

Keywords. Nomenclature; taxonomy; PLINTHINI; *Plinthus*; *Tylotus*; *Curculio megerlei*; *Curculio meyerlaei*; weevil.

1. Misspellings of the specific name *Curculio meyerlaei* as *megerlei*, and confusion between two different concepts of the species, threaten the stability of two well-known weevil generic names, *Tylotus* and *Plinthus*, and could lead to the family-group name PLINTHINI being made unavailable.

2. Fabricius (1801, p. 521) described *Curculio meyerlaei* based on an unknown number of specimens from Austria, sent to him by D. Scheidler. Although later authors evidently believed Fabricius was honouring Megerle with the name, and modified its spelling accordingly, Megerle's name is not recorded either as the source of the specimens or as the basis of the specific epithet. In the Fabrician Collection, now housed in the University Zoological Museum, Copenhagen (Denmark), there are two specimens under the name *Curculio meyerlaei*. They were sent to the first author with the information: 'Syntypes, Kiel II.521.84' and a label in brownish paper: 'Meyer/laei' (the slash indicates a new line) and '162' on the back. Both beetles are pinned with old large pins with metallic heads onto small pieces of polyethylene, each of these in turn being pinned with modern steel pins with nylon heads. Fabricius's description only applies to one of the two specimens, which (i) has tubercles on the pronotum ('thorax . . . punctis elevatis'), (ii) has the rostrum with a low keel ('rostrum

... subcarinatum') and (iii) is similar to *Curculio moerens* Fabricius, 1792 ('Statura C. moerentis ...') [*Barynotus moerens*, a broad-nosed weevil]. This specimen belongs to the genus *Tylotus* Schoenherr, 1823 (subfamily ENTIMINAE) and is here selected as lectotype of *Curculio meyerlaei* Fabricius, 1801, by the first author. The second specimen could have been added later and is clearly of a different species; the two original pins differ in their head size, indicating their separate origins.

3. Panzer (1803, nr. 7) purported to re-describe the Fabrician species. Panzer's publication has sometimes been dated as from 1794, but Evenhuis (1997) has, using a variety of bibliographic resources, fixed the date as 17 May 1803. Panzer used a misspelling *Curculio megerlei*, as follows: 'CURCULIO Megerlei. *Der Megerlesche Rüsselkäfer. CURCULIO Megerlei*: fasciis, thorace elytrisque scabris cinereo-lineatis, elytris ante apicem unidentatis. *Fabric. System. Eleutherat. I. II. n. 84. p. 521. Habitat in Austria. Dn. de Megerle. Femora omnia dentata. Antennarum clava cinerea.*' The name '*Curculio megerlei* Fabr.' is also used in the plate caption. The description is based on a single specimen (Panzer, 1805, p. 132) sent by Megerle. It is clearly a species of the genus *Plinthus* Germar, 1817, as usually understood (subfamily MOLYTINAE). Panzer (1803) thus misspelled the Fabrician name, and described a specimen of a different species. Panzer's name, as an incorrect subsequent spelling, is unavailable (Article 33.3 of the Code).

4. Latreille (1804, p. 186) transferred the Fabrician nominal species (the species now in *Tylotus*) to *Brachyrhinus* Latreille, 1802, as *Brachyrhinus meyerlaei*. This generic name is now suppressed (Opinion 982, BZN 29: 19–24, March 1972), but the concept was broadly equivalent to the present broad-nosed weevils. The type species of *Brachyrhinus* is *Curculio ligustici* Linnaeus, 1758, now placed in *Otiorhynchus* Germar, 1822.

5. Illiger (1805, p. 155) emended the spelling and questioned whether the specimen sent by Megerle (probably to Panzer; see paragraph 3 above) belonged to the species described by Fabricius: '*C. megerlei* fuscus etc. muss man lesen. Die Beschreibung passt wenig auf den von Hn. Megerle selbst erhaltenen Käfer. Panzer Faun. Germ. 87. tab. 6.' [*C. megerlei* fuscus etc. one must read. The description only weakly fits the beetle received from Hn Megerle. Panzer Faun. Germ. 87. tab. 6] The number quoted for the plate in Panzer is wrong. Whilst this name appears to be an intentional (although unjustified) emendation because of the association with the collector's name Megerle, the provisions of Article 3.2.1 are not met, so the name is not thereby made available. Illiger's concept was that of the species now in *Tylotus*.

6. Germar (1817, p. 340) described the genus *Plinthus*, including four named species: '31) *Plinthus* nob. *Curc. Megerlei, variolosus, Chrysops* Hb., *Lixus caliginosus* Fb.' These species are *Curculio megerlei* (although it cannot be determined whether he was referring to Fabricius' concept as renamed by Illiger, or Panzer's concept), *C. variolosus* Fabricius, 1775 (now a synonym of *Minyops carinatus* (Linnaeus, 1767), the genus being in the same subtribe as *Plinthus*), *C. chrysops* Herbst, 1797 (now a valid species in *Tylotus* Schoenherr, 1823) and *C. caliginosus* Fabricius, 1775 (now a valid species in *Mitoplinthus* Reitter, 1897, this genus also being in the same subtribe as *Plinthus*). This genus is thus originally a mixture of species now placed in two different subfamilies within CURCULIONIDAE (ENTIMINAE – genus *Tylotus* — and MOLYTINAE: MOLYTINI: PLINTHINA).

7. Dejean (1821, p. 88) included in his new genus *Meleus* four available nominal species (*Curculio megerlei* Fabricius, 1801, *C. variolosus* Fabricius, 1775, *C. carinatus* Linnaeus, 1767 (as a synonym of *variolosus* and with Olivier as author) and *C. caliginosus* Fabricius, 1775), as well as six nomina nuda, with another species being doubtfully included. The content of the genus as established suggests that Dejean was using Panzer's concept of the Fabrician *Curculio megerlei* – the species now in *Plinthus*.

8. Schoenherr (1823, col. 1143) designated '*Curculio megerlei* Fabricius' as type species for *Plinthus*, and synonymised *Meleus* Dejean, 1821 with *Plinthus*.

9. Schoenherr (1823, col. 1145) described a new genus *Tylotus* with type species *Curculio chrysops* Herbst, 1797.

10. Schoenherr (1826, p. 206) used *Tyloderes* as a new genus for *Curculio chrysops* Herbst, 1797, with no mention of the previously proposed name. Thus *Tyloderes* Schoenherr, 1826, is a junior objective synonym of *Tylotus* Schoenherr, 1823, having the same type species (Article 61.3 of the Code). *Tylotus* Schoenherr, 1823 is currently accepted as a genus near *Otiorhynchus* Germar, 1824, but it has been considered as a subgenus of the latter until recently (Magnano, 1988).

11. Germar (1836, p. 15) placed *Brachyrhinus meyerlaei* (Fabricius) in the genus *Tyloderes* Schoenherr, 1826, as '*Tyloderes megerlei*'. At this point, although it was not stated, nomenclaturally the genus *Plinthus* Germar, 1817, became a senior subjective synonym of *Tylotus* Schoenherr, 1823 and *Tyloderes* Schoenherr, 1826 (following paragraph 8 above).

12. Schoenherr (1842, p. 322) used '*Plinthus megerlei* Panzer' as a valid species, and accompanied the name with a short diagnosis by Boheman. Schoenherr (1842, p. 322) stated that '*Curculio megerlei* Fabricius' was a different species to '*Plinthus megerlei* Panzer', and belonged to *Tyloderes* (thus following Germar's (1842) placement). While this action clarifies Schoenherr's concept of *Plinthus* as similar to that of Panzer (see paragraph 3 above), it does not make '*Plinthus megerlei* Panzer' available. Moreover, even though Schoenherr clarified that '*Curculio megerlei* Fabricius' and '*Curculio megerlei* Fabricius *sensu* Panzer' are different species, the unrecognised nomenclatural synonymy of *Plinthus* Germar, 1817 and *Tylotus* Schoenherr, 1823. Article 69.2.7 cannot apply, since Germar, 1817 had not expressly stated that he was using Panzer's misidentification (paragraph 6 above). Article 70.3 cannot apply since the action was taken prior to the existence of the Code.

13. Schoenherr (1843, p. 389) reiterated his 1842 placement of '*Curculio megerlei* Fabricius' in *Tyloderes* and added a species description by Boheman. This description was based on a single specimen borrowed from the Copenhagen Museum, probably the one selected above as the lectotype.

14. Marseul (1872, p. 446) placed '*Tyloderes megerlei*' (Fabricius) in the genus *Otiorhynchus* Germar, 1822, where it stood for a long time as *Otiorhynchus* (*Tyloderes*) *megerlei* (Fabricius, 1801) (Lona, 1936, p. 219). At this point, although it was not recognised, nomenclaturally the genus *Plinthus* Germar, 1817, became a senior subjective synonym of *Otiorhynchus* Germar, 1822.

15. Westwood (1838, p. 36) designated *Curculio caliginosus* Fabricius, 1775 (now in *Mitoplinthus* Reitter, 1897), as type species for the genus *Plinthus*. This type species designation is invalid, being published after that by Schoenherr (1823).

16. Lacordaire (1863, p. 358, 360) separated the two Stirpes in which Schoenherr (1842, pp. 319 and 331) had divided the genus *Plinthus*. He selected the names *Meleus* Dejean for the first ('Stirps I.- Corpus ovatum') and *Plinthus* for the second ('Stirps 2.- Corpus elongatum. Femora semper dentata'). However, he failed to properly identify *Plinthus* Germar, since the type species belongs to *Tylotus*, as shown in the above paragraphs. He placed *Curculio megerlei* sensu Schoenherr (i.e. Panzer's concept) in the genus *Meleus* Dejean (although he also quoted it in synonymy of *Plinthus*). He included in *Plinthus* one North American species (*Plinthus carinatus* Boheman, 1842, now in *Steremnius* Schoenherr, 1836), five other species included in Schoenherr (1842), namely *Curculio tigratus* Rossi, 1792, *Plinthus granulatus* Boheman, 1842, *P. schalleri* Germar, 1824, *Rhynchaenus porculus* Fabricius, 1801 (all of them now in *Neoplinthus* Bedel, 1884) and *Curculio caliginosus* Fabricius, 1775 (now in *Mitoplinthus*), and several described later, namely *Plinthus mucronatus* Rosenhauer, 1847 (now in *Neoplinthus*), *P. parthenius* Costa, 1858 (now doubtfully in *Plinthus*), *P. nivalis* Jacquelin du Val, 1854 (now in *Iberoplinthus* Meregalli, 1986), *P. chevrolatii* Jacquelin du Val, 1854 (now in *Aparopion* Hampe, 1861), *P. musicus* Wollaston, 1860 and *P. velutinus* Wollaston, 1860 (both now in *Alloplinthus* Solari, 1941). This is clearly Westwood's concept of *Plinthus*, although not acknowledged as such.

17. Lacordaire (1863) placed *Meleus* in 'Groupe I. Molytides vrais' of his Molytides and *Plinthus* in his newly erected 'Groupe II. PLINTHIDES' of the same tribe. This vernacular name was later latinised to PLINTHIDAE by Kirsch (1869, p. 177). The tribe PLINTHINI Lacordaire, used currently in MOLYTINAE systematics is, because it is based on a misidentified genus (para. 16), a source of confusion and instability.

18. Faust (1886, p. 27) designated a type species for *Meleus*, stating 'Meleus Lac. typ. Megerlei Panz.'. This is an available type species designation for *Meleus* Dejean, even if the author of the genus is incorrectly quoted. The provisions of Article 11.10 and 49 of the Code cannot apply, since Faust did not recognise *C. megerlei* Panzer as a misidentification. With this designation, *Meleus* Dejean became an objective synonym of *Plinthus* Germar.

19. Faust (1886, p. 27) designated a type species for *Plinthus*, stating 'Plinthus Germ. typ. caliginosus Fabr.'. This designation is invalid because Schoenherr (1823, col. 1143) had already designated an available species, even though he had subsequently clarified that it was a misidentification.

20. Weise (1907, p. 13) described the genus *Epipolaeus* (type species *Curculio caliginosus* Fabricius, 1775, by subsequent designation by Méquignon, 1938, p.[469]), to replace *Plinthus* sensu Reitter, i.e. *Plinthus* sensu Lacordaire. This genus is a junior subjective synonym of *Mitoplinthus* Reitter, 1897 (Meregalli, 1986).

21. Silfverberg (1984) designated '*Curculio megerlei* Panzer 1805' as type species of *Meleus* and confirmed its objective synonymy with *Plinthus*, in ignorance that the species name was not available and that the designation had already been made by Faust (1886) (see para. 19).

22. The names currently in use and which, or the concepts of which, are threatened by the instability revealed, are the genus *Plinthus* Germar, 1817 (ca. 75 species), its type species *Curculio megerlei* Panzer, 1803, the holding tribe PLINTHINI, and the genus *Tylotus* Schoenherr, 1823 (three species). Whilst *Otiorhynchus* Germar, 1822 is currently not at risk, a reversal of the removal of *Tylotus* from subgeneric status

would require new combinations for more than 600 species and subspecies. The changes required to these well-known names through correction of the current usage to observe the rules of the Code are detailed in the following paragraphs. To preserve stability Alonso-Zarazaga & Lyal (1999) maintained current usage, despite being aware of the problem. A list of references from the past 50 years showing the usage of these names is held by the Commission Secretariat.

23. *Plinthus* Germar, 1817, would be the valid name in ENTIMINAE (where it has never been placed) for the genera *Tylotus* Schoenherr, 1823 and *Tyloderes* Schoenherr, 1826. The last two are objective synonyms of each other, and subjective synonyms of *Plinthus*. Three species currently in *Tylotus* would have to change their combinations to a genus where they have never been placed (excepting the type species of *Plinthus*).

24. *Plinthus* auctt. would require a name. The first available name is *Plinthomeleus* Reitter, 1912 (type species by original designation *Plinthus merkliei* Frivaldzsky, 1893), currently a subgenus of *Plinthus* auctt. However, a new name would still be required for the subgenus *Plinthus* auctt. itself. Under the name *Plinthus*, the genus has been completely revised recently (Kippenberg, 1981; Meregalli, 1985; Davidian, 1995; Meregalli & Davidian, 2007). Some 75 species would require a new genus name.

25. *Plinthus megerlei* Panzer, 1803 would require a new name. Kippenberg (1981, p. 112) selected a female lectotype from the named Panzer specimens held in the Historical collections of the Humboldt-Universität, Berlin, the only one of the series of 7 matching the current concept of '*Plinthus megerlei* (Panzer)', which he believed to be an available species name (other specimens represented other species of *Plinthus*). Because of this, the identity of *Plinthus megerlei* Fabricius *sensu* Panzer is now clearly established. This species has always been called *Plinthus megerlei* and has no available synonyms which could be used as replacement names.

26. The family-group name PLINTHINI, which has been in use since Lacordaire (1863) for a tribe including both *Meleus* and *Plinthus* auctt. and has been used in recent systematic papers discussing the classification of the subfamily MOLYTINAE (or HYLOBIINAE) (Marshall, 1932; Solari, 1941; Kuschel, 1987), is currently a source of nomenclatural instability and confusion. No replacement name based on a generic name reliably related to these two genera exists, so we are referring this problem to the Commission under Article 65.2.3 of the Code.

27. The International Commission on Zoological Nomenclature is accordingly asked:

(1) to use its plenary power:

- (a) to rule that the specific name *megerlei* Panzer, 1803, as published in the binomen *Curculio megerlei*, is available from its publication by Panzer (1803) with the endorsement that it is not to be taken as a misidentification of *Curculio meyerlaei* Fabricius, 1801;
- (b) set aside all previous type fixations for *Curculio megerlei* Panzer, 1803 prior to that by Kippenberg (1981);
- (c) to set aside all previous fixations of type species for the nominal genus *Plinthus* Germar, 1817, and designate *Curculio megerlei* Panzer, 1803, as ruled to be available in (1)(a) above;
- (d) to set aside all previous fixations of type species for the nominal genus *Meleus* Dejean, 1821, prior to the designation made by Faust (1886) of

Curculio megerlei Panzer, 1803, as ruled to be available in (1)(a) above, as the type species;

- (e) to rule that the family-group name PLINTHINI Lacordaire, 1863, is based on *Plinthus* Germar, 1817, as defined by the type species designation in (1) (c) above;
- (2) to place on the Official List of Generic Names in Zoology the following names:
 - (a) *Plinthus* Germar, 1817 (gender: masculine), type species *Curculio megerlei* Panzer, 1803 as ruled in (1)(c) above;
 - (b) *Tylotus* Schoenherr, 1823 (gender: masculine), type species *Curculio chrysops* Herbst, 1797, by original designation;
- (3) to place on the Official List of Specific Names in Zoology the following names:
 - (a) *meyerlaei* Fabricius, 1801, as published in the binomen *Curculio meyerlaei* and as defined by the lectotype designated in para. 2 above;
 - (b) *megerlei* Panzer, 1803, as published in the binomen *Curculio megerlei* (specific name of the type species of *Plinthus* Germar, 1817 and of *Meleus* Dejean, 1821, as ruled in (1)(c) and (1)(d) above;
 - (c) *chrysops* Herbst, 1797, as published in the binomen *Curculio chrysops*, specific name of the type species of *Tylotus* Schoenherr, 1823 and of *Tyloderes* Schoenherr, 1826;
- (4) to place on the Official List of Family-Group Names in Zoology the name PLINTHINI Lacordaire, 1863, type genus *Plinthus* Germar, 1817;
- (5) to place in the Official Index of Rejected and Invalid Generic Names in Zoology the following names:
 - (a) *Meleus* Dejean, 1821 (a junior objective synonym of *Plinthus* Germar, 1817);
 - (b) *Tyloderes* Schoenherr, 1826 (a junior objective synonym of *Tylotus* Schoenherr, 1823).

Acknowledgments

We thank Dr. Ole Martin (*University Zoological Museum, Copenhagen, Denmark*) for making specimens available for study, and Richard Thompson (*Natural History Museum, London*) for his valuable advice.

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Acknowledgement of receipt of this application was published in BZN **67**: 197.

Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to the Executive Secretary, I.C.Z.N., c/o Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).

Case 3526***Salmo formosanus* Jordan & Oshima, 1919 (currently *Oncorhynchus formosanus*) (Pisces, SALMONIDAE, SALMONINAE): proposed conservation of the specific name**

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Abstract. The purpose of this application, under Article 23.9.3 of the Code, is to conserve the specific name *Salmo formosanus* Jordan & Oshima, 1919 (currently *Oncorhynchus formosanus*) for an endemic landlocked salmon in Taiwan. The older name *Salmo saramao* Jordan & Oshima in Oshima, 1919 is a senior subjective synonym of *S. formosanus*, but has not been catalogued or used since it was described. The suppression of *S. saramao* is therefore proposed to conserve the name *S. formosanus*.

Keywords. Nomenclature; taxonomy; SALMONIDAE; *Oncorhynchus formosanus*; *Oncorhynchus saramao*; salmon; Taiwan.

1. On 18 October 1917, Takeo Aoki received a freshwater salmon specimen (33.9 cm TL, preserved with salt) from Saramao [Lishan], upstream of Taiko River [Tachia R.], Taiwan. He reported this finding and gave a detailed description for the specimen (Aoki, 1917a, b, c). However, no scientific name was provided.

2. Jordan & Oshima in Oshima (June 1919, p. 14) described *Salmo saramao* based on two specimens [syntypes], the mature salt-preserved specimen received by Takeo Aoki and a juvenile (14.8 cm TL, SU 23054) raised at Saramao police station in Musha (or Musya, Wushe), Taiwan. Jordan & Oshima (November 1919, p. 122) described *Salmo formosanus* based on the same salt-preserved specimen [holotype] received by Aoki. In the later publications, however, only the name *formosanus* was used while *saramao* was ignored.

3. A search for the possible types and type localities of both species revealed that the salt-preserved specimen [i.e. syntype of *saramao* and holotype of *formosanus*] had been lost and the juvenile specimen [i.e. syntype of *saramao*] was now deposited in the California Academy of Sciences (SU 23054).

4. Oshima (1934) reassigned *Salmo formosanus* to *Oncorhynchus*. Subsequently, Oshima (1936, p.1) considered *Oncorhynchus formosanus* to be a junior synonym of *Oncorhynchus masou* (Brevoort, 1856).

5. Behnke (1959) was evidently not aware of the existence of *S. saramao* and the type status of the SU specimen he examined (incorrectly cited as SU 23059 instead of SU 23054) and considered that *O. formosanus* (cited as *O. formosanum*) was a valid species. Subsequently, Behnke et al. (1962) examined five additional specimens collected from Sukairan Stream (CAS 85233) and suggested that there might be up to 3 species of freshwater salmon in Taiwan.

6. Numachi et al. (1990), Gwo et al. (2008), Chang et al. (2009), Gwo & Hsu (2010), Hsu & Gwo (2010) and Hsu et al. (2010) studied the genetics of the *O. masou* species complex and suggested that *O. formosanus* was one of four valid subspecies of *O. masou*, whereas the other three subspecies were endemic in Japan.

7. All current authors agree that there is only one native freshwater salmon species in Taiwan, cited first as *O. masou formosanus* by Watanabe & Lin (1985) and later as *O. formosanus* by Kottelat (1996) and Nakabo (2009). It is listed as *Oncorhynchus masou formosanus* (Jordan & Oshima, 1919) in *FishBase* (<http://www.fishbase.org>).

8. *Oncorhynchus formosanus* had been placed in the category ‘critically endangered’ in the IUCN Red List of Threatened Species (Kottelat, 1996).

9. Although the senior synonym *Salmo saramao* has not been used since it was proposed in 1919, this does not meet the requirements Article 23.9.1.1 of the Code for a nomen oblitum. However, the junior synonym has been used as the valid name for the subspecies *O. masou formosanus* or the valid species *O. formosanus* in at least 50 works published by more than 20 authors in the last 50 years.

10. Because the junior synonym has been used to represent the endemic landlocked salmon in Taiwan by all official documents and scientific publications for nearly one century while the senior synonym has been ignored since it was established, we proposed to retain the usage of *Salmo formosanus* by suppression of the name *Salmo saramao*.

11. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to suppress the name *saramao* Jordan & Oshima in Oshima, 1919, as published in the binomen *Salmo saramao*, for the purposes of the Principle of Priority but not for those of the Principle of Homonymy;
- (2) to place on the Official List of Specific Names in Zoology the name *formosanus* Jordan & Oshima, 1919, as published in the binomen *Salmo formosanus*;
- (3) to place on the Official Index of Rejected and Invalid Specific Names in Zoology the name *saramao* Jordan & Oshima in Oshima, 1919 as suppressed in (1) above.

Acknowledgements

We are grateful to W.N. Eschmeyer and D.G. Smith for discussion and correction and D. Catania and J. Fong for their curatorial assistance. This project is supported by National Science Council to J.-C. Gwo (98-2311-B-019-003-MY3) and by Academia Sinica to K.-T. Shao (99-0210-05-戊-02).

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Acknowledgement of receipt of this application was published in BZN **67**: 197.

Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to the Executive Secretary, I.C.Z.N., c/o Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).

Case 3528

Ephippus* Cuvier, 1816, EPHIPPIDAE Gill, 1861, *Scatophagus* Cuvier, 1831 and SCATOPHAGIDAE Bleeker, 1876 (Osteichthyes): proposed conservation of current usage by designation of *Chaetodon orbis* Bloch, 1787 as type species of *Ephippus

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Abstract. The purpose of this application, under Articles 65.2.1 and 65.2.2 of the Code, is to preserve stability in the nomenclature and taxonomy of two families of marine fishes by designating *Chaetodon orbis* Bloch, 1787 as the type species of the genus *Ephippus*. It has long been overlooked that the type species of *Ephippus* is actually *C. argus* and not *C. orbis*. *Chaetodon argus* is also the type species of *Scatophagus*. Under current usage, *Ephippus* and *Scatophagus* are the type genera of the family-group names EPHIPPIDAE and SCATOPHAGIDAE, respectively, two widely known families in fisheries, the pet trade, and medical and popular literature. Application of the Code would create confusion with the use of these two family-group and two genus-group names. It is proposed that *C. orbis* be designated as type species of the genus *Ephippus* to stabilise the current usage.

Keywords. Taxonomy; nomenclature; SCATOPHAGIDAE; *Scatophagus*; scats; EPHIPPIDAE; *Ephippus*; spadefishes; batfishes.

1. In the first edition of his *Règne animal*, Cuvier (1816, p. 335) established the genus name *Ephippus* with the following included species: *Chaetodon argus* Linnaeus, 1766 (p. 464) (currently in SCATOPHAGIDAE), *C. orbis* Bloch, 1787 (p. 81, pl. 202, fig. 2) (EPHIPPIDAE), *C. faber* Broussonet, 1782 (pl. 2, fig. 2) (EPHIPPIDAE) *C. tetracanthus* La Cepède, 1802 (pp. 726, 727) (SCATOPHAGIDAE), *C. punctatus* Linnaeus, 1758 (p. 273) and its unnecessary replacement name *C. falcatus* La Cepède, 1802 (pp. 452, 471) (DREPANEIDAE) and *C. bicornis* Cuvier, 1816 (p. 335) (CHAETODONTIDAE).

2. In the second edition of the *Règne animal*, Cuvier (1829, p. 191) recognised 4 unnamed divisions in his *Ephippus* (here called Divisions 1–4 in order to ease reading). The species originally included in Cuvier (1816) were placed in Division 1 (*C. faber*, *C. orbis*), Division 2 (*C. punctatus*, *C. falcatus*) and Division 3 (*C. argus*, *C. tetracanthus*). The content of Division 4 is not relevant here. His earlier (1816) *C. bicornis* had been made available by indication to Renard (1719, pl. 30, fig. 164); in 1829 Cuvier placed it in *Taurichthys*, as *T. varius*, also available by indication to the same figure and therefore an objective junior synonym.

3. Cuvier (in Cuvier & Valenciennes, 1831, p. 112) further elaborated on these divisions, retaining the name *Ephippus* for Division 1, while creating the new generic

names *Drepane* (p. 132) for Division 2, and *Scatophagus* (p. 136) for Division 3. Nothing in the text can be interpreted as a type-species designation. Later authors referring to *Ephippus* have used it as 'restricted' in Cuvier & Valenciennes (1831) to Division 1.

4. Cantor (1849) considered that *Ephippus* was preoccupied by *Ephippium* Latreille, 1805 (p. 341) (Diptera) and proposed *Ilarches* Cantor, 1849 (p. 1142) as a replacement name for '*Ephippus*, Cuvier 1829' [Division 1]. As *Ephippus* is not a homonym of *Ephippium*, *Ilarches* is an unnecessary replacement name. By *Ephippus*, Cantor clearly meant Cuvier's (1829) Division 1.

5. Cantor (1849) also created the name *Cacadoxus* Cantor, 1849 (p. 1145) to replace *Scatophagus*, which he considered pre-occupied by *Scatophaga* Meigen, 1803 (p. 277). These two names are not in fact homonyms (Article 56.2 of the Code) and further, *Scatophaga* is an incorrect subsequent spelling of *Scathophaga* (Article 54.3 of the Code); therefore, *Cacadoxus* is an unnecessary replacement name. *Prenes* Gistel, 1848 (p. x) is another unnecessary replacement name for *Scatophagus*.

6. Virtually all subsequent authors have until now used *Ephippus* for Cuvier's (1829) Division 1. Jordan & Evermann (1917, p. 105) listed the type species of *Ephippus* as *C. orbis* but explicitly refer to *Ephippus* as 'restricted' by Cuvier & Valenciennes (1831).

7. Bleeker (1876, p. 302) is one of the few authors to have used *Ephippus* by referring to Cuvier (1816) and applied it to Division 3. He designated '*Ephippus argus* Cuv. = *Scatophagus argus* CV' as type species of '*Ephippus* Cuv. (1817) nec Cuv. 1829'. He was probably influenced by the fact that in the 1816 edition Cuvier mentioned only *C. argus* in the text while all other included species were merely listed in a footnote. Bleeker listed *Scatophagus* Cuvier, 1831, *Cacadoxus* Cantor, 1849 and *Sargus* Gronow, in Gray, 1854 (p. 65) as synonyms of *Ephippus*. *Chaetodon argus* is also the type species of *Scatophagus*, by subsequent designation by Jordan & Evermann (1917, p. 136). This makes *Scatophagus* a junior objective synonym of *Ephippus*.

8. Bleeker (1876, p. 301) had to use a name to replace the '*Ephippus* CV (nec Cuv.)' [Division 1] and he used *Ilarches*, and listed *C. orbis* as type species. But, *Ilarches* is a replacement name for *Ephippus* Cuvier, 1816 (Article 67.7 of the Code), and therefore it is also a junior objective synonym of *Scatophagus*. There is presently no available genus name for Division 1 of *Ephippus* of Cuvier (1829).

9. *Scatophagus* is the type genus of the family-group name Scatophagiformes Bleeker, 1876 (p. 302). *Ephippus* is the type genus of the family-group name EPHIPPIINAE Gill, 1861 (p. 34). When creating EPHIPPIINAE, Gill intended it for Division 1 of *Ephippus* of Cuvier (1829).

10. Both EPHIPPIDAE and SCATOPHAGIDAE are in current use. As presently understood they are distinct families; both include species of interest to fisheries and the aquarium-fish trade and there is hardly a book on Indo-Pacific fishes or on aquarium fishes that does not mention one or both. EPHIPPIDAE includes about 15 species in 8 genera, e.g. *Platax* (batfishes), *Ephippus* (spadefishes). The SCATOPHAGIDAE includes at least two species of *Scatophagus* (scats) and *Selenotoca multifasciata* (silver scat). Further, species of SCATOPHAGIDAE have venom glands at the base of the spines and therefore enter also the medical literature. Because of their genus name (faeces eater) scats have also gained some notoriety in the non-ichthyological literature.

11. Article 65.2.1 of the Code states that if ‘confusion is likely to be caused by the discovery that the type genus was misidentified (that is, interpreted in a sense other than that defined by its type species) when the family-group name was established, the case is to be referred to the Commission for a ruling’. This was established in point (9) above. Article 65.2.2 carries the same requirement ‘if confusion is likely to be caused by the discovery of an overlooked fixation of type species for the type genus’. This was established in point (7) above.

12. In compliance with Articles 65.2.1 and 65.2.2 of the Code, the International Commission on Zoological Nomenclature is requested to set aside all previous fixations of type species for the nominal genus *Ephippus* Cuvier, 1816 and to designate *Chaetodon orbis* Bloch, 1787 as the type species.

13. Retaining *C. argus* as type species of *Ephippus* would create confusion as the name EPHIPPIDAE should then be used for the present SCATOPHAGIDAE [Division 3] and *Scatophagus* would become *Ephippus*. Additionally, a new genus name would be needed for the present *Ephippus* [Division 1]. The family name of Division 1 too, should then be replaced. Existing family-group names based on genera currently included in Division 1 are Proteracanthiformes Bleeker, 1876 (p. 296), Chaetodipteriformes Bleeker, 1876 (p. 300), and Plataciformes Bleeker, 1876 (p. 308). As they were simultaneously proposed, and in the apparent absence of a first reviser action, I give here precedence to PLATACIDAE Bleeker, 1876, because the name occasionally appears in the literature for a subset of Division 1.

14. The spellings EPHIPPIDAE, EPHIPPIIDAE and EPHIPPIDIDAE appear in the literature. *Ephippus* is not a Latin word (the word exists, but it is the personal name of a Latin writer). It is a latinisation of the Greek ἔφιππος (ephippos, riding on horse back) as is obvious from Cuvier’s (1829) heading ‘Les Ephippus ou cavaliers’ [the Ephippus or horsemen]. Therefore the stem is *Ephipp-* (Article 29.3.2 of the Code) and the name is EPHIPPIDAE.

15. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to set aside all previous fixations of type species for the nominal genus *Ephippus* Cuvier, 1816 and to designate *Chaetodon orbis* Bloch, 1787 as the type species;
- (2) to place on the Official List of Generic Names in Zoology the name *Ephippus* Cuvier, 1816 (gender: masculine), type species *Chaetodon orbis* Bloch, 1787, as designated in (1) above;
- (3) to place on the Official List of Specific Names in Zoology the name *orbis* Bloch, 1787, as published in the binomen *Chaetodon orbis* (specific name of the type species of *Ephippus* Cuvier, 1816, as ruled in (1) above).
- (4) to place on the Official List of Family-Group Names in Zoology the name EPHIPPIDAE Gill, 1861, type genus *Ephippus* Cuvier, 1816;

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Acknowledgement of receipt of this application was published in BZN 67: 198.

Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to the Executive Secretary, I.C.Z.N., c/o Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).

Case 3510

***Cyclodina aenea* Girard, 1857 (currently *Oligosoma aeneum*; Reptilia, Squamata, SCINCIDAE): proposed conservation of the specific name and suppression of the senior subjective synonym *Tiliqua ornata* Gray, 1843 (currently *Oligosoma ornatum* Gray, 1843)**

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Abstract. The purpose of this application, under Article 75.6 of the Code, is to conserve the specific name of the name *Oligosoma aeneum* (Girard, 1857), widely used for a species of New Zealand skink, commonly known as the copper skink. We have found *Tiliqua ornata* Gray, 1843 (currently *Oligosoma ornatum*) to be a senior subjective synonym and the oldest available name for this species. The name *Oligosoma ornatum* has been incorrectly applied since 1977 to a similar but larger sympatric species, commonly known as the ornate skink, and prior to 1977 was in use for a third species, now identified as the brown skink, *Oligosoma zelandicum* (Gray, 1843). With various generic name changes the name *Oligosoma ornatum* has been in widespread usage for the larger ornate skink and *Oligosoma aeneum* for the smaller copper skink, for more than 30 years. Application of the specific name *Oligosoma ornatum* to a third species within 35 years will cause extreme confusion and inaccuracy of recording of biological data and conservation status. The Commission is requested to maintain the use of the junior synonym *Oligosoma aeneum* as a nomen protectum and suppress the name *Oligosoma ornatum* as a nomen oblitum.

Keywords. Nomenclature; taxonomy; Reptilia; Squamata; SCINCIDAE; *Oligosoma*; *Cyclodina*; *Oligosoma ornatum*; *Oligosoma aeneum*; copper skink; ornate skink; New Zealand.

1. In the process of writing a paper redefining the North Island New Zealand skink species currently known as *O. ornatum* (ornate skink) we discovered that the relative size of the ear opening is a character which very reliably separates the two species currently known as ornate skink and copper skink. These species, the smaller copper skink and the larger ornate skink, are broadly sympatric. They differ in diagnostic details of colour and colour pattern as well as in adult size, but the only diagnostic character we have been able to find, which can be used in bleached museum specimens small enough to be either species is the relative size of the ear opening. The

reliability of this character was not recognised previously and has only become apparent to us in the last year. Our re-examination of the holotype of *Tiliqua ornata* Gray, 1843 establishes that it is conspecific with the smaller species currently known as *O. aeneum* (copper skink). Although the colour has faded, the small size of the specimen combined with its sexual maturity, and the size of the ear opening confirm this identification, in agreement with Robb (1977, 1986). The animal also has six supralabials whereas all of the *O. ornatum* specimens we have examined as part of our revision have seven. It is not possible to carry out a genetic analysis of the holotype because of its state of preservation.

2. Gray (1843) established the name *Tiliqua ornata*. The holotype BMNH RR1946.8.19.39 is in the collection of the Natural History Museum, London. This type belongs to the smaller of two similar widespread North Island New Zealand skink species.

3. Girard (1857) established the name *Cyclodina aenea*. The type was listed by Hardy (1977) as lost from the collection of the Smithsonian Institution National Museum. Zug (1985) reported that there is no catalogue entry for this species in the Smithsonian, so the specimen may never have been deposited, and also could not find it in the collection of the Academy of Natural Sciences in Philadelphia. The description agrees with the copper skink, the smaller of the two widespread North Island New Zealand skink species – the same species which the types of *Tiliqua ornata* Gray, 1843 belong to.

4. On the same page of the same paper as his description of *C. aenea*, Girard (1857) described *Hombronia undosa* from a specimen from the same locality. This name is a junior synonym of *Cyclodina aenea* Girard, 1857 (Hardy, 1977, p. 264) and of *Tiliqua ornata* Gray, 1843. We have borrowed the holotype specimen of *Hombronia undosa* (USNM 5627) from the Smithsonian, and found it to be completely bleached of all colour. However, despite a skin fold partially obscuring it, the diagnostic relative size of the ear opening confirms the previous (e.g. Hardy, 1977) inclusion of this name in the synonymy of *Cyclodina aenea* Girard, 1857.

5. *Lygosoma micans* Werner, 1895 was regarded as another synonym of *Cyclodina aenea* Girard, 1857 by Lucas & Frost (1897), Hardy (1977) and Chapple et al. (2008). The authors of the latter two papers provided no discussion of this synonymy, and Lucas & Frost (1897) referred only to the published description, not to any specimen. We were unable to locate the holotype specimen of *Lygosoma micans* for examination. Type collections of the Zoologisches Museum, Hamburg (which we assume to be the Sammlung der zoologisch vergleichend-anatomische Universitäts-Institutes referred to in the description) were destroyed during WWII. However, we consider that the original description of this species differs in several important respects from both species under discussion here, and that this name is not referable to either. The colour is described as showing strong longitudinal mid-dorsal, dorso-lateral and lateral stripes as seen in *Oligosoma moco* (endemic to the northern North Island) and some *O. polychroma* (found in the southern North Island, South and Stewart Islands) and *O. maccani* (South Island only) but not in copper or ornate skinks. Werner's (1895) description specifically mentions that the limbs are longer and the subdigital lamellae count higher than in *Lygosoma* (now *Oligosoma*) *aeneum*.

6. Lucas & Frost (1897) associated the name *Tiliqua ornata* (cited as *Homolepida ornatum*) with the ornate skink, using *Liolepisma aeneum* for the copper skink. *Liolepisma* is an incorrect spelling of *Leiolopisma* Duméril & Bibron 1839.

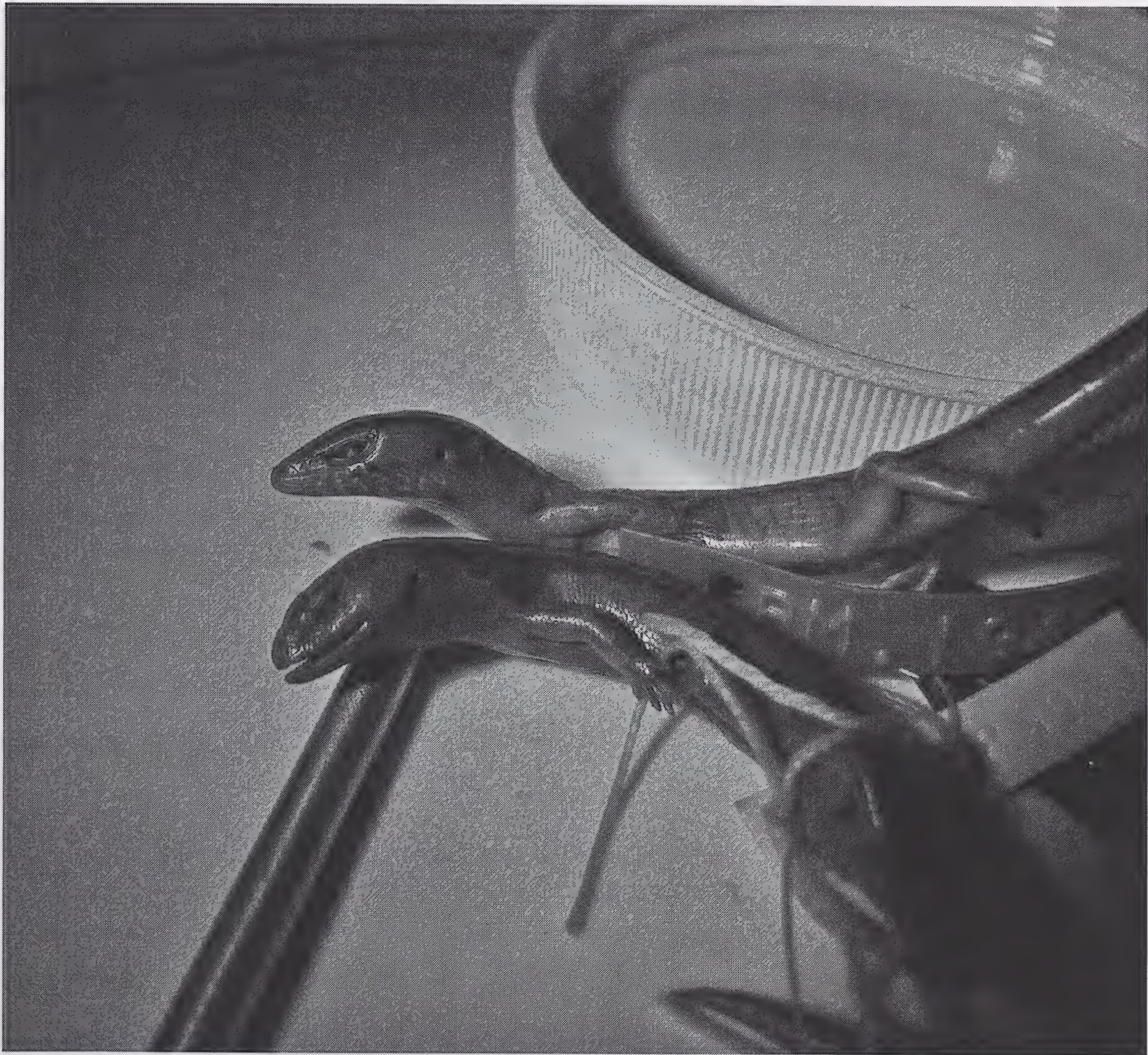


Fig. 1. Upper animal is the ornate skink, the larger species to which we believe Hardy (1977) incorrectly applied the name *O. ornatum*, lower is BMNH RR1946.8.19.39, holotype of *Tiliqua ornata* Gray (1843). We believe the two are not conspecific – note relative sizes of ear openings.

7. McCann (1955), in his monograph revising all New Zealand lizards, misapplied the specific name *ornata* (cited as *Leiolopisma ornata*) to the species now identified as *Oligosoma zelandicum* (Gray, 1843). In turn, he misapplied the name *L. zelandica* to the common skink, a species since described as *O. polychroma*. He did not examine any of the relevant types, stating that they were unavailable. He correctly identified the specific name *aenea* (cited as *Leiolopisma aenea*) with the copper skink, but used it only for populations in the southern half of the species' range. He described a new species *Sphenomorphus pseudornatus* McCann, 1955, a compound taxon which included the ornate skink plus northern populations of the copper skink. He referred to Gray's 1843 types of *Tiliqua ornata* as the types of the new species, so *Sphenomorphus pseudornatus* McCann, 1955 is an objective junior synonym of *Tiliqua ornata* Gray, 1843.

8. We consider that the names *Tiliqua ornata* Gray, 1843, *Cyclodina aenea* Girard, 1857, *Hombrovia undosa* Girard, 1857 and *Sphenomorphus pseudornatus* McCann, 1955 all belong to the smaller species, the copper skink.



Fig. 2. The copper skink *O. aeneum* sensu Girard (1857). The picture is provided by R. Ramijn.



Fig. 3. The ornate skink, the larger species, for which Hardy (1977) used the name *O. ornatum*, incorrectly in our opinion. The picture is provided by A.H. Whitaker.

9. Gill (1976) clarified the nomenclature of *Tiliqua zelandica* Gray, 1843 (p. 202) (cited as *Leiolopisma zelandica* and currently placed in *Oligosoma*), establishing that the holotype of *zelandica* (BMNH RR1946.8.16.19) belonged to the species with the common name brown skink, not the common skink to which McCann (1955) had misapplied the name. He did not mention the copper or ornate skinks in this paper.

10. Hardy (1977, p. 263) determined that specimen BMNH RR1946.8.19.39 was the holotype of *Tiliqua ornata* Gray, 1843. He clarified the distinction between the two species which had been partly confused by McCann (1955) (McCann's *Leiolopisma aenea* and *Sphenomorphus pseudornatus*), but, following Lucas & Frost (1897), he misidentified the totally bleached holotype of *T. ornata* and used the name *ornata* incorrectly for the larger species. Hardy (1977) also redescribed *Cyclodina aenea* Girard, 1857 to include populations of the smaller species from all parts of the North Island, and resurrected the genus *Cyclodina* Girard, 1857. Included in this genus were both species under discussion here plus four others (*C. oliveri*, *C. alani*, *C. macgregori* and *C. whitakeri*).

11. Robb (1977, 1986) correctly identified the types of *Tiliqua ornata* Gray, 1843 with the smaller species colloquially known as the copper skink, based primarily on the small size of the BMNH type specimen combined with its sexual maturity. She also rejected *Cyclodina* as a distinct genus, recognising all the New Zealand skinks as members of *Leiolopisma*. However her proposal was poorly explained and was not generally accepted and Hardy's (1977) nomenclature continued in general use.

12. Patterson & Daugherty (1995) transferred all New Zealand members of *Leiolopisma* to the resurrected endemic genus *Oligosoma* Girard, 1857, but continued to recognise *Cyclodina* Girard, 1857 as distinct. *Cyclodina* included the six species assigned to the genus by Hardy (1977); all other endemic New Zealand skinks were included in *Oligosoma*.

13. Chapple et al. (2008) described two new narrow-range local endemic species related to the copper skink, and re-diagnosed the widespread copper skink. They acknowledged uncertainty over the specific identity of the types of *Tiliqua ornata* Gray, 1843, but were unable to resolve the issue, and followed the status quo in using the name *Cyclodina aenea* Girard, 1857 for the copper skink.

14. Chapple et al. (2009) synonymised *Cyclodina* Girard, 1857 with *Oligosoma* Girard, 1857. This meant that all endemic New Zealand skinks are now members of *Oligosoma*.

15. Scientific interest in New Zealand reptiles has increased enormously in the last 30 years. The Society for Research on Amphibians and Reptiles in New Zealand has more than 100 members, and in addition a substantial number of conservation managers in the New Zealand Department of Conservation and regional government bodies, and informed amateur members of the public have significant interest in lizards (<http://www.doc.govt.nz/conservation/native-animals/reptiles-and-frogs/species-information/atlas-of-the-amphibians-and-reptiles-of-nz/electronic-atlas/>; <http://www.doc.govt.nz/conservation/native-animals/reptiles-and-frogs/species-information/atlas-of-the-amphibians-and-reptiles-of-nz/electronic-atlas/get-atlas-species-names/>; <http://www.reptiles.org.nz/>; <http://www.srarnz.org.nz/>; <http://www.landcareresearch.co.nz/research/wildlifeecol/herpetology/>; Hitchmough et al. (2010); Gill & Whitaker (2001); Jewell (2008); Towns (1985); Barnett (1985); Department of Conservation (2002); Dawson & Lucas (2000); Fitter (2010); Gill (1986); Hudson (1994); Hunt & Lucas (2004); Newman (1982); Pickard & Towns (1988); Porter (1989); Ussher (2001).

The great majority of these people have known only the current nomenclature (*O. aeneum* for the smaller species and *O. ornatum* for the larger species). In addition the common names for the larger species (ornate skink) and smaller species (copper skink) are derived directly from the currently-used specific names. Providing new names for these species would cause considerable confusion, but transferring the same name from one to the other will make the confusion extreme. Their ranges are almost completely sympatric and they are morphologically similar apart from adult size, relative size of ear opening and some details of colour pattern. The reliability of many distribution records and other data related to these two species could be compromised for many years to come because of this confusion, and there is a serious risk of information from the previous different use of the name being associated with the wrong species. The larger ornate skink in particular, while still widespread, is believed to be in decline and is of some conservation concern (Hitchmough et al., 2010). This species has no available specific name and will require a new one. Its conservation will be compromised if there is widespread confusion over the identity of records of specimens identified as *O. ornatum*. Potential confusion already exists because of the incorrect use of the name *ornata* for the brown skink between 1955 and 1977; transferring the same specific name to the copper skink now will compound this problem.

16. We consider there is a very strong case to suppress the senior synonym *Oligosoma ornatum* in favour of *Oligosoma aeneum* to avoid unnecessary confusion of the two species.

17. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to suppress the name *ornata* Gray, 1843, as published in the binomen *Tiliqua ornata*, for the purposes of the Principle of Priority, but not for those of the Principle of Homonymy;
- (2) to place the name *aenea* Girard, 1857, as published in the binomen *Cyclodina aenea*, on the Official List of Specific Names in Zoology;
- (3) to place the name *ornata* Gray, 1843, as published in the binomen *Tiliqua ornata*, on the Index of Rejected and Invalid Specific Names in Zoology as suppressed in 1 (above).

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Acknowledgement of receipt of this application was published in BZN **67**: 2.

Comments on this case are invited for publication (subject to editing) in the Bulletin; they should be sent to the Executive Secretary, I.C.Z.N., c/o Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).

Comment on the proposed conservation of the specific name of *Callidea lateralis* Guérin-Méneville, 1838 (currently *Lamprocoris lateralis*; Insecta, Heteroptera)
(Case 3523; see BZN 67: 213–217)

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I agree completely with the four items listed under Paragraph 9 in Case 3523. Basically, *Lamprocoris lateralis* (Guérin-Méneville, 1838) has been used in many publications, including economic ones and even popular ones; *Lamprocoris obtusus* (Westwood, 1837) has not. Moreover, *Lamprocoris lateralis* in the revised sense is widespread as an economic species, and – under that name – has been redescribed and its biology described.

I was the editor of the Tsai & Rédei (2009) paper in *Zootaxa*, and we have briefly discussed this problem before. Again, I strongly support Rédei & Tsai's arguments in Case 3523.

Comment on the proposed precedence of *Megaselia abdita* Schmitz, 1959 over *Aphiochaeta griseipennis* Santos Abreu, 1921 (currently *Megaselia griseipennis*; Diptera, PHORIDAE)
(Case 3521; see BZN 67: 238–242)

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I would like to express my strong support for the request to conserve the specific name *Megaselia abdita* for the scuttle fly in question. Our laboratory is part of a small but growing research community using this species as a laboratory model for embryological studies. We are using quantitative approaches to study the processes involved in segmentation, heart and mechano-sensory bristle development in this species.

Renaming *Megaselia abdita* would lead to considerable confusion regarding the significant number of research papers already published on the subject.

Comment on the proposed precedence of *Maculinea* van Eecke, 1915 over *Phengaris* Doherty, 1891 (Lepidoptera, LYCAENIDAE)
(Case 3508; see BZN 67: 129–132)

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This comment rejects the proposal of Case 3508, requesting the Commission to use its plenary power to rule the precedence of *Maculinea* van Eecke, 1915, over *Phengaris* Doherty, 1891, in order to stabilise zoological nomenclature. We suggest that such an act would not serve this purpose but would, indeed, be likely to produce the opposite effect.

(1) *Maculinea* was synonymised with *Phengaris* by Fric et al. (2007); the very close relationship of Asiatic *Phengaris* and palaearctic *Maculinea* was shown earlier by Als et al. (2004) and Pech et al. (2004). The main purpose for the precedence of *Maculinea* over *Phengaris* is, according to Balletto et al. (BZN 67: 129–136), the prevention of nomenclatural confusion in view of the importance of *Maculinea* species; because they serve as model organisms of obligatory myrmecophily and because of the inclusion of the genus *Maculinea* in European legislature.

(2) Balletto et al. claim that the name *Maculinea* van Eecke, 1915, has been universally used for the European and Asiatic ‘Large Blue’ butterflies for almost a century and that it is involved in the ‘old and the recent scientific literature alike, as well as [in] all standard reference books on European butterflies (Higgins & Riley, 1970; Tolman & Lewington, 1997, Asher et al. 2001, etc.)’. We have to reject such a statement. We consider that the use of *Maculinea* has not been stable during the last century as claimed in Case 3508. Furthermore, two of the ‘standard reference books’ cited above are field guides and the third is a distribution atlas of British butterflies, none of these publications being of taxonomic or major scientific importance. During

the last 100 years or so we observe the use of three different generic names for the same species, subsequently placed by Fric et al. (2007) in the genus *Phengaris*. In fact the confusion in zoological nomenclature originated from the erection of the genus *Maculinea* by van Eecke (1915) in his study on West European species of the family LYCAENIDÆ. He included in the genus the following species: *Papilio alcon* [Schiffermüller, 1775], *P. euphemus* Hübner, 1800 (= *P. teleius* Bergsträsser, 1779), *P. arion* Linnaeus, 1758 and *P. arcas* Rottemburg, 1775 (= *P. nausithous* Bergsträsser, 1779), as well as *P. cyllarus* Rottemburg, 1775 (= *P. alexis* Poda, 1761) and *Polyommatus melanops* Boisduval, 1829. It is evident that van Eecke was not aware of the existence of the genus *Glaucopsyche* Scudder, 1872, nor of the genus *Phengaris* Doherty, 1891. Van Eecke also ignored a paper by Bethune-Baker (1914), who mentioned the relations of *Glaucopsyche* Scudder, 1872 (*P. alexis* was already placed in *Glaucopsyche*). It took a few decades before *Maculinea* was, by and large, accepted by lepidopterists as a genus. The exceptions were rare. Hemming (1934) noted that *Argus* Boisduval, 1832, proposed for *P. alcon*, is invalid, being a junior homonym of *Argus* Bohadsch, 1761, and thus cannot take precedence over *Maculinea*. However, a vast majority of lepidopterists assigned all species concerned to the genus *Lycaena* Fabricius, 1807, e.g. Seitz (1908–1909 and 1929–1932, apparently following Spuler, 1901–1908) and Rebel (1910). Forster (1938) treated *Maculinea* as a subgenus of *Glaucopsyche*. However, Verity (1943) and Forster & Wohlfahrt (1952–1955) treated *Maculinea* as a distinct genus. Since then, the name *Maculinea* has generally been adopted, although in some areas the use of *Lycaena* endured much longer (e.g. Bergmann, 1952; Kurentzov, 1970). Some 15 years ago Nässig (1995) synonymised *Maculinea* with *Glaucopsyche* and his treatment was used in at least some books (Hesselbarth et al., 1995; Settele et al., 2000) and papers (Pauler-Fürste et al., 1996; Pfeifer et al., 2000). Finally, Settele et al. (2009) used *Phengaris* for the European species in the new edition of their book.

(3) We do not question the importance of *Maculinea* species as model organisms for studies of the origin and evolution of parasitic interactions and of host-parasite communication channels. Nonetheless there are numerous model organisms, many of which have changed generic names as it became necessary. One famous example used by Tinbergen (Tinbergen et al., 1942) was known as *Eumenis semele* (Linnaeus, 1758) at the time, but the well established present combination is *Hipparchia semele*. An even higher-ranking example, *Rana pipiens* (Schreber, 1782), a model species used in medical, neurological, developmental and physiological studies for many years (e.g. Nilsson, 1964; Jackson & Reichlin, 1977; Ardelt et al., 2008) is now known also as *Lithobates pipiens* (i.e. Frost et al. 2006). In the similar Case 3407, the proposal of van der Linde et al. (2007) to protect the name of a much more important model organism, *Drosophila melanogaster*, was recently rejected by the Commission with an overwhelming majority vote. In that case, the authors of the proposal wanted to change the type species of the genus *Drosophila* from *D. funebris* to *D. melanogaster*. In the present Case 3508 the authors fail to provide a taxonomically feasible way to preserve the name *Maculinea*.

(4) No problems in conservation and legal protection have arisen for instance in the case of amphibians, despite extensive taxonomical changes that have recently taken place within this group (see Litvinchuk et al., 2005; Frost et al., 2006). These changes concerned such species as *Pelophylax lessonae* (Camerano, 1882) (formerly

Table 1. Google search for three different generic name combinations of *Maculinea* and *Phengaris* species. October 5, 2010.

<i>Maculinea</i>		<i>Phengaris</i>		<i>Glaucopsyche</i>	
<i>M. arion</i>	19,300	<i>P. arion</i>	6,170	<i>G. arion</i>	89,000
<i>M. arionides</i>	2,320	<i>P. arionides</i>	262	<i>G. arionides</i>	444
<i>M.alcon</i>	12,000	<i>P.alcon</i>	3,680	<i>G.alcon</i>	80,200
<i>M. rebeli</i>	7,070	<i>P. rebeli</i>	2,260	<i>G. rebeli</i>	76,400
<i>M. teleius</i>	34,000	<i>P. teleius</i>	2,270	<i>G. teleius</i>	3,650
<i>M. nausithous</i>	32,400	<i>P. nausithous</i>	569	<i>G. nausithous</i>	4,310
TOTAL	107,090		15,211		254,004
		<i>P. albida</i>	376	<i>G. albida</i>	53,200
		<i>P. atroguttata</i>	1,220	<i>G. atroguttata</i>	180
		<i>P. daitozana</i>	721	<i>G. daitozana</i>	119
TOTAL			2,317		53,499

Table 2. Google search for quoted combinations of different generic names of *Maculinea* and *Phengaris* species; i.e. for the strict binomen use. October 5, 2010.

<i>Maculinea</i>		<i>Phengaris</i>		<i>Glaucopsyche</i>	
<i>M. arion</i>	18,300	<i>P. arion</i>	4,620	<i>G. arion</i>	3,530
<i>M. arionides</i>	1,940	<i>P. arionides</i>	82	<i>G. arionides</i>	0
<i>M.alcon</i>	9,980	<i>P.alcon</i>	2,470	<i>G.alcon</i>	1,160
<i>M. rebeli</i>	5,270	<i>P. rebeli</i>	1,210	<i>G. rebeli</i>	110
<i>M. teleius</i>	31,300	<i>P. teleius</i>	1,380	<i>G. teleius</i>	1,480
<i>M. nausithous</i>	31,600	<i>P. nausithous</i>	312	<i>G. nausithous</i>	1,800
TOTAL	98,390		10,074		8,080
		<i>P. albida</i>	179	<i>G. albida</i>	0
		<i>P. atroguttata</i>	1,130	<i>G. atroguttata</i>	0
		<i>P. daitozana</i>	607	<i>G. daitozana</i>	0
TOTAL			1,916		0

Rana lessonae), *Epidalea calamita* (Laurenti, 1768) (formerly *Bufo calamita*) and *Pseudepidalea viridis* (Laurenti, 1768) (formerly *Bufo viridis*). All these species are protected by EU Habitat directive, Annex IV, as well as many other amphibians protected by law in many countries.

(5) The authors of Case 3508 used as an argument the numerical precedence of *Maculinea* over *Phengaris* in a Google search; the name *Maculinea* was used well over 30 times more often than the name *Phengaris* to designate all six species treated by them in *Maculinea*, as shown in the following table. Their argument is not representative as *Maculinea* was synonymised with *Phengaris* only three years ago. We demonstrate that there are a lower number of usages, i.e. 1,127 per year over 95 years for *Maculinea* and 5,070 over 3 years for *Phengaris* in the case of one species. This shows that *Phengaris* is being accepted by the lepidopterists' community. Furthermore, we have also checked the usage of *Glaucopsyche*. *Maculinea* was synonymised with this genus by Nässig (1995) and Google found more than 254,000 hits (Table 1). This argues against the stability of usage of *Maculinea* over almost a century. We are aware that the use of the Google search as an argument can be questioned as it can group together more species, and therefore we repeated the search with quoted names, i.e. looking strictly for binominal combinations (Table 2). Although these results were not so dramatic, they again demonstrated the acceptance

of *Phengaris* and could not confirm the stability of *Maculinea* (all but one of the species occurred in combination with three different generic names).

(6) Although it is not of any importance for the purpose of Case 3508, we note that the authors wrongly used 'Van Eecke' instead of 'van Eecke' throughout the text, as well as placing '[Sic!]' in the citation of [Denis & Schiffermüller (1775)], where the title was the correct German spelling in the 18th century.

(7) We therefore recommend rejection of these proposals, as the use of plenary power by the Commission would destabilise zoological nomenclature, and we support application of the Principle of Priority, i.e. the priority of *Phengaris* Doherty, 1891 over *Maculinea* van Eecke, 1915.

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Comments on the proposed conservation of usage of *Testudo gigantea* Schweigger, 1812 (currently *Geochelone (Aldabrachelys) gigantea*; Reptilia, Testudines)

(Case 3463; see BZN **66**: 34–50, 80–87, 169–186, 274–290, 352–357; **67**: 71–90, 170–178, 246–254)

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1. Summary

Case 3463 promotes nomenclatural stability and universality through conservation of the oldest, most frequently cited, most widely recognised name for the Aldabra tortoise, *Testudo gigantea* Schweigger, 1812, with a neotype fixed to Aldabra Atoll. It opposes nomenclatural confusion sustained by inconsistent, contradictory nomenclatural proposals causing incessant debates, and proposes the suppression of *Testudo dussumieri* Gray, 1831, a name resurrected after more than a century of disuse and tied to a lectotype of uncertain provenance and taxonomy, unsuitable as the name-bearing type for the Aldabra tortoise. Case 3463 does not pretend to resolve taxonomic questions or bear on generic names, other than to make *Aldabrachelys* Loveridge & Williams, 1957 – established explicitly for the Aldabra tortoise – available for this taxon. Case 3463 does not debate the veracity of the holotype of *T. gigantea*, disqualify certain professions from nomenclatural discussions, or restrict nomenclatural issues to the exclusive domain of an elite group. It seeks multidisciplinary relevance and widespread valuing of the Commission and its Code, especially in collaboration with specialists in conservation biology.

2. BZN documents specific to Case 3463

To date the Bulletin of Zoological Nomenclature (BZN) has carried Case 3463 (BZN 66: 34–50) and subsequent comments published in 7 sequential issues: 66(1) (pp. 80–87; 17 comments, all supporting); 66(2) (pp. 169–186; 16 supporting (including a comment with 17 signatures), 3 opposing); 66(3) (pp. 274–290; 30 supporting, 1 opposing); 66(4) (pp. 352–357; 3 supporting, 1 opposing), 67(1) (pp. 71–90; 5 supporting, 4 opposing, including 4 authors who each wrote 2 or 3 opposing comments); 67(2) (pp. 170–178; 6 supporting, 1 opposing); 67(3) (pp. 246–254; 1 supporting), totalling 88 comments, 78 supporting and 10 opposing.

3. Derivation of Case 3463

Case 3463 was submitted after the neotype designation to stabilise the binomen *T. gigantea* Schweigger, 1812 (Frazier, 2006) was closely followed by a report of rediscovery of the long lost holotype, thereby invalidating the neotype (Bour, 2006).

4. Justification for Case 3463

Widespread, increasing nomenclatural instability generates intense confusion which retards research, conservation, and management, as well as discrediting taxonomic sciences; and this creates an urgent need to stabilise the name of the Aldabra tortoise. A profusion of specific, generic, and binomial names have been applied to one distinctive taxon – the Aldabra tortoise (BZN 66: 39–40 para. 22); two thirds of the 49 synonyms of *T. gigantea* were established after 1981 (Fritz & Havaš, 2007, pp. 265–267). More than one binomen has been used for this taxon in the same book, in the same chapter, and even on the same page of peer-reviewed scientific publications (e.g. Jacobson, 2007, p. 597; Miller & Dinkelacker, 2007, pp. 232, 242, 249, 260; Paré & Jacobson, 2007, pp. 534, 563–565; Stirk et al., 2007, pp. 171, 206, 208, 216; BZN 66: 43 para. 28), disproving the claim of Dubois et al. (BZN 67: 83–84) that publication of Case 3463 caused nomenclatural confusion. Proponents for replacing *gigantea* have acknowledged that their acts ‘... run counter to an apparently satisfying system’ (Bour, 1984b, p. 281) and ‘... invalidation of the familiar epithet *gigantea* represents a rather profound upheaval’ (Pritchard, 1986, p. 531). The vast majority of Case 3463 comments describe high levels of nomenclatural confusion, even ‘chaos’.

5. The prevailing name for the Aldabra tortoise

The name *gigantea* has been attached to the Aldabra tortoise since 1881, recognised as the oldest name for this taxon since 1897, and identified as the senior synonym in authoritative taxonomic reviews since 1909 (BZN 66: 37 paras 10–11). Of the most common species names (*dussumieri*, *elephantina*, and *gigantea*), *gigantea* is by far the most frequent – often by an order of magnitude. Lawrence et al. (BZN 67: 249) performed detailed evaluations of internet sites specialised for publications, and they reported that, out of a total of 1435 publication records available, 1144 (80%) used *gigantea* for the Aldabra tortoise while only 163 used *dussumieri*. These results contradict what Bour et al. (BZN 67: 76) claimed based on their numbers from general ‘Google’ searches, a procedure that is unreliable for evaluating relative frequencies of names in publications (BZN 67: 250). Furthermore *gigantea* prevails

despite internet searches being biased against older publications which have not been digitised; *gigantea* has been in use from 1812 to the present; *dussumieri* was used rarely between 1831 and 1870, not used for over a century between 1871 and 1983, and resurrected in 1984 (Frazier & Matyot, 2010). Moreover, a majority of publications that use *dussumieri* are authored by one person, J. Gerlach. Most taxonomists, administrators, biologists, conservationists, ecologists, educators, and systematists, from dozens of institutions and countries, recognise *gigantea* as the correct name – that used in scientific and popular publications, legal documents, treaties, and other official papers. All but one of over a score of commentators (including the Minister of Environment) from the Republic of Seychelles – where the taxon is endemic – regard *gigantea* as the accustomed and correct name (BZN 66: 80–87, 176–184, 274–283, 285–290, 352–354, 356–357; BZN 67: 71, 78, 81, 90, 170–177, 178; see supplement deposited with Commission Secretariat for more details). Opponents to Case 3463, who have promoted one and then another alternative name, have admitted that *gigantea* is the most widely recognised and established name: ‘... from the beginning of the 20th century, the valid name for the Aldabra tortoise seemed to have been definitely settled, and the binomina *Testudo gigantea* or *Geochelone gigantea*, with Schweigger as the author, have been widely used until today’ (Bour, 2006, p. 15; see also Bour, 1984a, p. 162, 1984b, p. 281; Bour & Pritchard BZN 66: 171); ‘... there was a period of active publication on Aldabra during the 1960s and 1970s when *gigantea* was used almost exclusively ...’ (Cheke, BZN 66: 174–175); and ‘... *gigantea* has indeed been the name in commonest use for the Aldabra tortoises in the 20th century ...’ (Pritchard, 1986, p. 531). Opponents have contradicted themselves, with claims based on selected binomina that produce results supporting their arguments (e.g. BZN 66: 185). Opponents misrepresent the Case, confounding ‘prevailing name’ with ‘stable nomenclature’ (BZN 66: 173; 185; BZN 67: 77; 84–85): Case 3463 does not intimate stability in the use of *T. gigantea*, a situation that would make the petition redundant.

6. The holotype of *T. gigantea* Schweigger, 1812

After the original 1812 description of *T. gigantea*, the holotype (by monotypy) was never again mentioned, even by A.M.C. Duméril who supervised Schweigger’s work; by 1915 it was regarded as lost (BZN 66: 37 para. 12). Bour (2006) reported having rediscovered Schweigger’s holotype shortly after a neotype designation (Frazier, 2006). Notwithstanding, many commentators, including those experienced in the management of museum collections, are not convinced of the rediscovery (BZN 66: 80; 82; 86; 87; 177; 182; 183; 275; 277; 280; 285; 286; 288; BZN 67: 78; 90; 173). Support for the rediscovery is based on the opinions of those who oppose Case 3463, e.g. ‘... see no reason to doubt that specimen MNHN 9554 is Schweigger’s holotype ...’ (BZN 66: 174); ‘... Bour (2006) describes a specimen which corresponds extremely closely to the type. His account of this specimen leaves no reasonable doubt that it is indeed the type of *Testudo gigantea*.’ (BZN 66: 184); ‘Thus, I think these minor differences can not be used to invalidate the rediscovery of the holotype of *Testudo gigantea*.’ (BZN 66: 255). Hence, confirmation of the holotype is open to interpretation – either one believes it or one does not – so debates about the status of the holotype will continue to rage, as shown in recent comments (BZN 67: 74; 84). Opponents complained that supporters of Case 3463 have not studied MNHN 9554,

the purported holotype (BZN 66: 170; BZN 67: 74; 85), and they presented detailed discussions about Articles 75.3.4, 75.3.5, 75.3.6 (BZN 66: 355 incorrectly referred to as Article 76.3.6; BZN 67: 75; 86). However, they misconstrue Case 3463; it is not about the validity of the holotype, its measurements, type locality etc., and such discussions are a diversion from the central point. Case 3463 rests on Article 75.8, to set aside all previous type material, independent of what it is, where it was collected, who discovered it, or other details debated by the opponents (see Article 75.6 for similar situations: ‘When an author discovers that the existing name-bearing type of a nominal species-group taxon is not in taxonomic accord with the prevailing usage of names and stability or universality is threatened thereby, he or she should maintain prevailing usage [Art. 82] and request the Commission to set aside under its plenary power [Art. 81] the existing name-bearing type and designate a neotype.’). Widespread uncertainty and disagreement about the rediscovery claim promote endless debate and nomenclatural instability, further justifying invoking Article 75.8. As Vences (BZN 66: 282) concluded, ‘Considering the disagreements in the past, it is unlikely that the scientific community will reach a consensus on which name to use without an unambiguous decision of the Commission – and such a consensus is badly needed to make discussions on the evolution, ecology and conservation of these fascinating creatures available to a wide audience’.

7. The lectotype of *T. dussumieri* Gray, 1831

Frazier & Matyot (2010) provide a detailed evaluation of *T. dussumieri* and its lectotype; some critical points follow. Bour (1984a, p. 171 footnote 1) fixed RMNH 3231 as the lectotype of *T. dussumieri* Gray, 1831, (Article 74.5 of the Code), and later (2006, p. 22), in an invalid subsequent lectotype designation, declared that it should be used as the name-bearing type for the Aldabra tortoise. Basic problems in nomenclature and taxonomy negate this proposal. There is no convincing evidence that the lectotype is from Aldabra; historic research suggests that it is from Mahé, granitic Seychelles – the locality is uncertain. Given the probable locality and date of collection the specimen could be a taxon distinct from the Aldabra tortoise. RMNH 3231 is thus not a suitable name-bearing type for the Aldabra tortoise, and continued use of the binomen will further complicate nomenclatural and taxonomic discussions.

8. The neotype of *T. gigantea* Schweigger, 1812

The neotype is from Aldabra Atoll, and its validation (by invoking Articles 75.8 and 76.3) would conserve the prevailing species name, make available the genus-group name (*Aldabrachelys*) established explicitly for this taxon, and comply fully with critical parts of the Code, namely, (a) the Preamble: ‘The objects of the Code are to promote stability and universality in the scientific names of animals and to ensure that the name of each taxon is unique and distinct. All its provisions and recommendations are subservient to those ends . . .’; (b) Article 23.2: ‘Purpose. In accordance with the objects of the Code (see Preamble), the Principle of Priority is to be used to promote stability and it is not intended to be used to upset a long-accepted name in its accustomed meaning by the introduction of a name that is its senior synonym . . .’; and (c) definition of ‘neotype’: ‘The single specimen designated as the name-bearing type of a nominal species or subspecies when there is a need to define

the nominal taxon objectively and no name-bearing type is believed to be extant. If stability and universality are threatened, because an existing name-bearing type is either taxonomically inadequate or not in accord with the prevailing usage of a name, the Commission may use its plenary power to set aside that type and designate a neotype.' The neotype of the Aldabra tortoise champions the vision that 'the work of nomenclature aims for stability in names' (Pyle & Michel, 2009, p. 41; see also Pauly et al., 2009, p. 117).

9. Unfamiliar alternate names

Alternate names for the Aldabra tortoise are unfamiliar to a wide audience, and their use often includes an explanation that the taxon is the same as *gigantea*, the accustomed name (BZN 66: 40 paragraph 23). An opponent to Case 3463 wrote 'It was perhaps unfortunate that *dussumieri* was revived . . .' (Cheke, BZN 66: 175). The overwhelming support for conserving *gigantea*, led a second proponent of alternative names to accede ' . . . although I and some others have argued for the use of *dussumieri* and *Dipsochelys*, most commentary to the ICZN to date has supported the use of *gigantea* and *Aldabrachelys* . . . Therefore, as an editorial compromise for this species account in this monograph series, the Aldabra giant tortoise is here provisionally referred to *gigantea* rather than *dussumieri*, and Arnold's giant tortoise to the genus *Aldabrachelys* rather than *Dipsochelys*.' (Gerlach, 2009, p. 028.3).

10. Contradictory and conflicting proposals and unfounded claims

Nomenclatural confusion stems from contradictory and conflicting proposals as well as unfounded claims related to changing both the specific and generic names; e.g. several opposing commentators have actively promoted first one and then another alternate name for the Aldabra tortoise. There are too many contradictory, unfounded claims used to oppose Case 3463 to be listed herein, but four recent contradictions warrant mention.

(i) Bour (1982, p. 117) claimed that Schweigger's (1812) description of *T. gigantea* – which included 'Brasilia' as the locality – referred 'unquestionably' to *Cylindraspis indica* (Schneider, 1783), an extinct species endemic to La Réunion, Mascarene Islands; he maintained this position for 2 decades and then changed (Bour, 2006) arguing that Schweigger's description referred to *Chelonoidis denticulata* (Linnaeus, 1766), a South American species. During this period he claimed that the valid name for the Aldabra tortoise was *T. elephantina* Duméril & Bibron, 1835. This allegation was despite the fact that he recognised that (a) *T. gigantea* was the established name for the Aldabra tortoise, and (b) *T. dussumieri* Gray, 1831, was an older name than *T. elephantina* (e.g. Bour, 1984a, 1984b, 1985, 1988, 1994). In 2003 Bour began using *T. dussumieri* for the Aldabra tortoise (Gerlach & Bour, 2003; Bour, 2006). Recently Bour (2009) adopted a contradictory position in a comparable situation regarding the importance of prevailing names and commented that, although Linnaeus' (1758) description of *Testudo orbicularis* was based on a specimen of *Mauremys leprosa* (Schoepff, 1812), 'I do not wish to run counter to the stability of nomenclature' (for details see Havaš, BZN 67: 171).

(ii) Dubois (2010) openly opposed parts of the Code, but he conceded that prevailing use could be accepted if his criteria were met. He insisted (p. 268) that the

name should be (a) ‘...in general use in the non-specialized literature, i.e. in publications that do not deal with systematics, taxonomy or phylogeny’: (b) in ‘permanent paper publications’; (c) ‘signed by authors from a significant number of different countries who did not publish together on the taxa at stake’; (d) in ‘publications that appeared prior to public discussion of the case’; and that (e) ‘more importance should be given to books than to papers in periodicals’; and (f) ‘only its use in the titles of publications’. Case 3463 easily qualifies with all of Dubois’ criteria, but he recently led a passionate comment to oppose the conservation of the prevailing use of *T. gigantea* (BZN 67: 82–89).

(iii) Hoogmoed (BZN 66: 354–356) opined that Case 3463 is unnecessary but, earlier in a similar situation, Hoogmoed & Crumly (1984: 255) invoked Article 73(c) (i) of the Code (1964) to designate a lectotype of *Psammobates geometrica* (Linnaeus, 1758), after it was discovered that Linnaeus’ (1758) description of *Testudo geometrica* applied to a specimen of *Geochelone elegans* (Schoepff, 1795). Hoogmoed & Crumly took this measure ‘... in order to conserve current usage and prevent nomenclatural chaos’ (for details see Havaš (BZN 67: 170–174).

(iv) Pritchard (1986) presented lengthy arguments for using *Aldabrachelys elephantina* for the Aldabra tortoise, then co-authored 3 impassioned comments in the BZN claiming that *Dipsochelys dussumieri* was the valid name (BZN 66: 169–174; 67: 72–74, 74–77). However, most recently he used *D. elephantina* for this animal (Pritchard, 2010, p. 42), employing a third binomial combination.

11. Pros and cons of conserving *Testudo gigantea* Schweigger, 1812 for the Aldabra tortoise

Accepting Case 3463 would: (a) fix the name-bearing type to a specimen from Aldabra; (b) calm interminable debates and contradicting proposals for the name of a distinctive taxon that is of great and wide ranging interest to taxonomists, conservationists, and many other disciplines; (c) conform with the needs of diverse fields, including conservation and international accords; and (d) conform with all aspects of the Code, particularly its purpose and spirit. Case 3463 shuns the ‘kind of pedantic legalism that exposes taxonomists to ridicule by other biologists’ (Williams & Bowman, 1994, p. 224) and seeks relevance among a wide, diverse body of users (Pauly et al., 2009, p. 117–118, 126). Rejecting Case 3463 would: (a) give the Principle of Priority complete dominance to other aspects of the Code, overwriting such parts as the Preamble and Article 23.2 (definition of purpose); (b) promote a name-bearing type of uncertain provenance and identity; (c) foster continued, intense debates (e.g. provenance and identity of the lectotype of *T. dussumieri*; veracity of the holotype discovery, etc.); and (d) protect an elitist view of the Code. Regardless, generic names would not be affected, other than the availability of *Aldabrachelys* for the Aldabra tortoise, and no taxonomic issue would be directly resolved (Pyle & Michel, 2008).

12. Conclusions

The nomenclature of the Aldabra tortoise has been unacceptably – and unnecessarily – unstable and confused for over a decade, resulting in what many people of different disciplines call ‘nomenclatural chaos’. Speculations involving ‘shards of certainty’ about historic interpretations (often resulting in self contradictions) have been argued

to pay strict, mechanical, obedience to the Principle of Priority, but the central principle of the Code would be undermined by not recognising the prevailing name and the clear needs of a diverse community, including – but not limited to – taxonomists. Maintaining the neotype of *T. gigantea* Schweigger, 1812, and suppressing *T. dussumieri* Gray, 1831, provides the simplest, most widely acceptable, least disruptive means to promote lasting nomenclatural stability for a distinctive taxon – and its close allies – that will support the needs of a diverse community and respect the spirit and priority of the Code. Not a single thing is learned about the animal in question by changing its name. Renaming the Aldabra tortoise as *dussumieri* will not solve problems for the future: there will be interminable debates about the lectotype as well as about the veracity of the holotype of *gigantea* and other details relating to these specimens and related taxa, with the tone dropping to personal attacks and defences. Hence, nothing is lost by employing Article 75.8 and fixing the nomenclatural mess so that various professions – including taxonomy – can get on with research and conservation activities.

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foremost global conservation-focused species checklists: the IUCN Red List of Threatened Species™ and the Convention on International Trade in Endangered Species of Fauna and Flora (CITES). I urge the Commission to act in the best interests of both nomenclatural stability and conservation of the species and to not allow this controversial quagmire to continue – let us instead move forward and refocus our conservation efforts to protect and preserve this iconic species, and to refer to it by its most widely accepted and historically most unequivocally recognised species name – *gigantea*.

Additional references

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I am writing in opposition to the application by Frazier to designate a neotype for *Testudo gigantea*.

Hubrecht (1881, p. 43) was the first author to list the type locality of *T. gigantea* as Aldabra. However, this argument has never been justified, and recent rediscovery of the type specimen (MNHN 9554) by Bour (2006) demonstrates that *T. gigantea* is based on a specimen of *Chelonoidis denticulata*. The name *Testudo gigantea* should remain attached to the holotype (MNHN 9554) and the names *Testudo dussumieri* and *Dipsochelys* should be used for the Aldabra tortoise. Additionally, Hubrecht downplayed the validity of the type locality of *T. gigantea* as Brazil.

As Bour et al. (BZN 67: 76) have demonstrated, there is no agreement on which name should be used for the Aldabra tortoise.

Comment on the proposed conservation of usage of *Allosaurus* Marsh, 1877 (Dinosauria, Theropoda) by designation of a neotype for its type species *Allosaurus fragilis* Marsh, 1877

(Case 3506; see BZN 67: 53–56; 178, 255–256)

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Here are several points of Case 3506 that need clarification:

1. *Hypsirophus discurus* Cope, 1878 (mis-spelled as *Hypsirophis discursis* in BZN 67: 54) is a stegosaur and not an allosaur (Maidment et al., 2008). The type specimen, AMNH 5731, actually consists of a dorsal vertebra, two caudal neural arches, and two caudal centra (Galton, 2010).

2. Marsh (1877) actually listed the type specimen of *Allosaurus fragilis* (YPM 1930) as consisting of two centra (one dorsal and one caudal) and a phalanx, but Madsen (1976) found a tooth and a humerus in YPM 1930 while Mickey Mortimer's website, (<http://home.comcast.net/~eoraptor/Carnosauria.htm#Allosaurusfragilis>) lists the *A. fragilis* type specimen as consisting of a tooth, an incomplete cervical or anterior dorsal centrum, an incomplete posterior dorsal centrum, a posterior dorsal centrum, two dorsal rib fragments, a humeral fragment, and a pedal phalanx III-1.

3. Paul and Carpenter do not mention that *Camptonotus amplus* (holotype YPM 1879) has also been considered a synonym of *Allosaurus fragilis* by Bakker (1998). However, because YPM 1879 consists of a foot only *Camptonotus amplus* qualifies as a nomen dubium.

4. Paul (1988) referred AMNH 666 to *Creosaurus atrox* and used that specimen to distinguish *C. atrox* from *A. fragilis*. However, referral of AMNH 666 to *Creosaurus atrox* awaits the publication of Chure's (2000) thesis. Chure (2000) finds DINO 11541 to be distinct from *Allosaurus fragilis*.

5. If the suggestions of Paul & Carpenter regarding the taxonomy of *Allosaurus* are confirmed by the publication of Chure's (2000) thesis, then *Allosaurus fragilis* will be restricted to USNM 4734 and YPM 1930.

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Comment on the proposed conservation of usage of *Mastodon waringi* Holland, 1920 (currently *Haplomastodon waringi*; Mammalia, Proboscidea) by designation of a neotype

(Case 3480; see BZN 66: 164–167, 358–359; 67: 96; 181–182)

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Regarding *Mastodon chimborazi*, Pasenko (BZN 67: 96) overlooked the statement by Ferretti (BZN 66: 358–359) that the holotype of *M. chimborazi* was not completely destroyed in a fire.

The type material of *M. waringi* is from Pedra Vermelha, Brazil, whereas the holotype of *M. chimborazi* and MECN 82, 83, 84, 133 (designated as the neotype of *M. chimborazi* by Ficarelli et al., 1995) were collected from Ecuador (Ficarelli et al., 1995). Lucas selects a specimen from a locality different from the type locality of *M. waringi*, and his action does not fully comply with Article 75.3.6 of the Code (i.e. that evidence should be given that a neotype came as nearly as practicable from the same locality as the holotype).

Given the data above, I urge the Commission to reject the proposals in Case 3480.

Additional references

Ficarelli, G., Borselli, V., Herrera, G., Moreno Espinosa, M. & Torre, D. 1995. Taxonomic remarks on the South American mastodons referred to *Haplomastodon* and *Cuvieronius*. *Geobios*, 28: 745–756.

OPINION 2257 (Case 3467)

**ZOSIMIDAE Seifried, 2003 (Crustacea, Copepoda, Harpacticoida):
emendation of spelling to ZOSIMEIDAE to remove homonymy with
ZOSIMINAE Alcock, 1898 (Crustacea, Decapoda, XANTHIDAE)**

Abstract. The Commission has ruled that the homonymy between the family-group names ZOSIMINAE Alcock, 1898 (Crustacea, Decapoda) and ZOSIMIDAE Seifried, 2003 (Crustacea, Copepoda) is removed. The entire generic name *Zosime* has been adopted as the stem – making the spelling of the junior homonym ZOSIMEIDAE.

Keywords. Nomenclature; taxonomy; Crustacea; Decapoda; Copepoda; Harpacticoida; XANTHIDAE; ZOSIMIDAE; ZOSIMINAE; ZOSIMEIDAE; *Zosime*; *Zosimus*; *Zosime typica*; cosmopolitan.

Ruling

- (1) Under the plenary power it is hereby ruled that for the purposes of Article 29 the stem of the generic name *Zosime* Boeck, 1873 is *Zosime*-.
- (2) The name *Zosime* Boeck, 1873 (gender: feminine), type species by monotypy *Zosime typica* Boeck, 1873 (Crustacea, Copepoda), is hereby placed on the Official List of Generic Names in Zoology.
- (3) The name *typica* Boeck, 1873, as published in the binomen *Zosime typica* (specific name of the type species of *Zosime* Boeck, 1873) (Crustacea, Copepoda), is hereby placed on the Official List of Specific Names in Zoology.
- (4) The following names are hereby placed on the Official List of Family-Group Names in Zoology:
 - (a) ZOSIMINAE Alcock, 1898, type genus *Zosimus* A.-G. Desmarest, 1823 (Crustacea, Decapoda);
 - (b) ZOSIMEIDAE Seifried, 2003, type genus *Zosime* Boeck, 1873 (spelling emended by the ruling in (1) above) (Crustacea, Copepoda).
- (5) The name ZOSIMIDAE Seifried, 2003 (an incorrect original spelling of ZOSIMEIDAE, as ruled in (1) above) (Crustacea, Copepoda) is hereby placed on the Official Index of Rejected and Invalid Family-Group Names in Zoology.

History of Case 3467

An application to remove homonymy between the family-group names ZOSIMINAE Alcock, 1898 (Crustacea, Decapoda) and ZOSIMIDAE Seifried, 2003 (Crustacea, Copepoda) by changing the spelling of the junior homonym was received from R. Huys and P.F. Clark (*Natural History Museum, London, U.K.*) on 29 May 2008. After correspondence the case was published in BZN 66: 24–29 (March 2009). The title, abstract and keywords of the case were published on the Commission's website. No comments on this case were received.

Decision of the Commission

On 1 June 2010 the members of the Commission were invited to vote on the proposals published in BZN 66: 26–27 (March 2009). At the close of the voting period on 1 September 2010 the votes were as follows:

Affirmative votes – 26: Alonso-Zarazaga, Ballerio, Bogutskaya, Bouchet, Brothers, Fautin, Grygier, Halliday, Harvey, Kojima, Kottelat, Krell, Kullander, Lamas, Lim, Minelli, Ng, Pape, Papp, Patterson, Rosenberg, Štys, van Tol, Winston, Yanega and Zhou.

Negative votes – 0.

Pyle and Zhang were on leave of absence.

Voting FOR, Ng observed that this was an expedient and simple solution that should keep all parties happy.

Original references

The following are the original references to the names placed on Official Lists by the ruling given in the present Opinion:

typica, Zosime, Boeck, 1873, *Forhandlinger i Videnskabselskabet i Kristiania*, 1872: 45.

Zosime Boeck, 1873, *Forhandlinger i Videnskabselskabet i Kristiania*, 1872: 45.

ZOSIMEIDAE Seifried, 2003, *Phylogeny of Harpacticoida (Copepoda): Revision of 'Maxillipedasphalea' and Exanechentera*. Cuvillier Verlag, Göttingen, p. 100.

ZOSIMIDAE Seifried, 2003, *Phylogeny of Harpacticoida (Copepoda): Revision of 'Maxillipedasphalea' and Exanechentera*. Cuvillier Verlag, Göttingen, p. 100.

ZOSIMINAE Alcock, 1898, *Journal of the Asiatic Society of Bengal*, 67(2)(1): 94.

OPINION 2258 (Case 3475)***Myrmarachne* MacLeay, 1839 (Araneae, SALTICIDAE): generic name conserved**

Abstract. The Commission has conserved the generic name *Myrmarachne* MacLeay, 1839 for a well-known and widespread group of extant, ant-mimicking jumping spiders (Araneae, SALTICIDAE) by suppression of the little-used senior subjective synonym *Entomocephalus* Holl, 1829 originally introduced for a fossil spider.

Keywords. Nomenclature; taxonomy; Araneae; SALTICIDAE; *Myrmarachne*; *Entomocephalus*; jumping spider.

Ruling

- (1) Under the plenary power it is hereby ruled that the generic name *Entomocephalus* Holl, 1829 is suppressed for the purposes of the Principle of Priority but not for those of the Principle of Homonymy.
- (2) The name *Myrmarachne* MacLeay, 1839 (gender: feminine), type species by monotypy *Myrmarachne melanocephala* MacLeay, 1839, is hereby placed on the Official List of Generic Names in Zoology.
- (3) The name *melanocephala* MacLeay, 1839, as published in the binomen *Myrmarachne melanocephala*, specific name of the type species of *Myrmarachne* MacLeay, 1839, is hereby placed on the Official List of Specific Names in Zoology.
- (4) The name *Entomocephalus* Holl, 1829, as suppressed in (1) above, is hereby placed on the Official Index of Rejected and Invalid Generic Names in Zoology.

History of Case 3475

An application to conserve the generic name *Myrmarachne* MacLeay, 1839 for a well-known and widespread group of extant, ant-mimicking jumping spiders (Araneae, SALTICIDAE) by suppression of a little-used senior subjective synonym, *Entomocephalus* Holl, 1829 was received from J.A. Dunlop (*Museum fuer Naturkunde der Humboldt-Universitaet zu Berlin, Germany*) and D. Penney (*University of Manchester, U.K.*) on 14 August 2008. After correspondence the case was published in BZN 66(1): 20–23 (March, 2009). The title, abstract and keywords of the case were published on the Commission's website. One comment in support was published in BZN 66(2): 168.

Decision of the Commission

On 2 March 2010 the members of the Commission were invited to vote on the proposals published in BZN 66: 22 (March 2008). At the close of the voting period on 2 June 2010 the votes were as follows:

Affirmative votes – 19: Alonso-Zarazaga, Ballerio, Bouchet, Brothers, Grygier, Halliday, Harvey, Kottelat, Krell, Kullander, Lim, Minelli, Ng, Papp, Rosenberg, van Tol, Winston, Yanega and Zhou.

Negative votes – 7: Bogutskaya, Fautin, Kojima, Lamas, Pape, Patterson and Štys. Pyle and Zhang were on leave of absence.

Bogutskaya, voting AGAINST, suggested that the authors should have asked for conditional suppression for the two generic names which are ‘probably’ subjective synonyms. Fautin, voting AGAINST, felt the Case was not clearly formulated. The authors were uncertain of the identity of the genus they ask to suppress as there is no specimen resembling the illustration that was the source of the name, much less the original one itself. Lamas, voting AGAINST, also noted that the subjective synonymy between *Entomocephalus* Holl, 1829, and *Myrmarachne* MacLeay, 1839 has not been formally established, and the authors only consider it ‘likely’ that those names are synonyms. He felt that the Commission was being asked to endorse a subjective taxonomic decision which has not yet been established. Štys, voting AGAINST, said that while he fully agreed with the spirit of the proposal, the generic name *Entomocephalus* Holl, 1829 does not need to be suppressed, and a conditional suppression would have been sufficient.

Winston, voting FOR, noted that this Case was a good demonstration of the problems created when a fossil is used as type of what is otherwise a Recent group.

Original references

The following are the original references to the names placed on Official Lists by the ruling given in the present Opinion:

Entomocephalus Holl, 1829, *Handbuch der Petrefactenkunde*, Hilscher, Dresden, pp. 178–9.
melanocephala, *Myrmarachne*, MacLeay, 1839, *Annals and Magazine of Natural History*, (1)2:
11.

Myrmarachne MacLeay, 1839, *Annals and Magazine of Natural History*, (1)2: 10.

OPINION 2259 (Case 3435)***Bagauda* Bergroth, 1903 (Insecta, Heteroptera): usage not conserved and priority maintained for *Pleias* Kirkaldy, 1901**

Abstract. The Commission has ruled that priority is maintained for the generic name *Pleias* Kirkaldy, 1901 a thread-legged assassin bug from Afrotropical and Oriental Regions, 1901, thus it remains the senior synonym of the name *Bagauda* Bergroth, 1903 (type species *Bagauda avidus* Bergroth, 1903).

Keywords. Nomenclature; taxonomy; REDUVIIDAE; EMESINAE; *Bagauda*; *Pleias*; *Pleias ritsemae*; thread-legged assassin bug; Afrotropical and Oriental Regions.

Ruling

- (1) The generic name *Bagauda* Bergroth, 1903 has not been given precedence over the name *Pleias* Kirkaldy, 1901 whenever the two are considered to be synonyms.
- (2) No names are placed on Official Lists or Indexes and the issue is left open for subsequent workers to follow the precepts of the Code or to make new proposals to the Commission.

History of Case 3435

An application to conserve the usage of the name *Bagauda* Bergroth, 1903 (type species *Bagauda avidus* Bergroth, 1903) for a genus of thread-legged assassin bug from Afrotropical and Oriental Regions, by giving it precedence over the senior generic name *Pleias* Kirkaldy, 1901 was received from D. Rédei (*Hungarian Natural History Museum, Budapest, Hungary*) on 26 July 2007. After correspondence the case was published in BZN 65: 93–96 (June 2008). The title, abstract and keywords of the case were published on the Commission's website. One comment in support of this case was published in BZN 65: 304 (December 2008).

Decision of the Commission

On 1 June 2009 the members of the Commission were invited to vote on the proposals published in BZN 65: 94 (June 2008). At the close of the voting period on 1 September 2009 the votes were as follows:

Affirmative votes – 13: Brothers, Fautin, Halliday, Harvey, Krell, Papp, Patterson, Rosenberg, Štys, Winston, Yanega, Zhang and Zhou.

Negative votes – 14: Alonso-Zarazaga, Ballerio, Bogutskaya, Bouchet, Grygier, Kojima, Kottelat, Kullander, Lamas, Lim, Minelli, Ng, Pape and van Tol.

Pyle was on leave of absence.

Voting AGAINST, Bouchet said that although Kirkaldy's original description was published in 'Notes from the Leyden Museum', it appeared that nobody examined the holotype in that museum (now Naturalis). He felt that disregard for priority would encourage sloppy work, and application of priority in this case will affect only

a very small body of literature. Also voting AGAINST, Kojima felt that this was a taxonomic matter rather than a nomenclatural issue. Based only on the author's taxonomic decision (that is that *Pleias ritsemae* is congeneric with *Bagauda avidus*), the Commission was asked to use its plenary power to give *Bangauda* precedence over *Pleias*. Kottelat voted AGAINST, with the comment that the application did not explain why the change of the name of a genus including only 18 species threatened stability. The application did not mention what would be the wider impact of the change, besides affecting a few taxonomists who should be able to cope with routine nomenclatural changes resulting from new taxonomic knowledge. Kullander, voting AGAINST, said that the best action is for taxonomists to consistently apply priority as soon as possible to avoid more confusion. Lamas voted AGAINST, saying he also saw no justification in voting against the Principle of Priority for this particular case. Ng voted AGAINST, saying that it is regrettable that the synonymy has only now been found, even though the type is extant in a good museum. He saw no strong reason why the Principle of Priority should not apply as the names concerned are not of a nature that will affect biology that widely. A simple taxonomic change is all that is needed, and after initial uncertainty, the name will be in broad use. He also noted that the oldest name, *Pleias* Kirkaldy, 1901, has been regarded as *incertae sedis* by earlier workers and not missed, so the name has been accepted as present for many years.

OPINION 2260 (Case 3460)***Liburnia* Stål, 1866 (Insecta, Hemiptera, DELPHACIDAE): proposed designation of *Embolophora monoceros* Stål, 1855 as the type species**

Abstract. A proposal to fix the type species of the genus *Liburnia* Stål, 1866 as *Embolophora monoceros* Stål, 1855 for a genus of delphacid planthopper was not approved by the Commission. Commission action was not required, since *Liburnia* Stål, 1866 was proposed by its author as a junior objective synonym of *Embolophora* Stål, 1853. Consequently, the type species for both is *Embolophora monoceros* Stål, 1855, regardless of Stål's (1866) intentions.

Keywords. Nomenclature; taxonomy; DELPHACIDAE; *Liburnia*; *Embolophora*; *Embolophora monoceros*; delphacid planthopper; Afrotropical.

Ruling

- (1) It is hereby ruled that the application to fix the type species of the genus *Liburnia* Stål, 1866 as *Embolophora monoceros* Stål, 1855 for a genus of delphacid planthopper was not approved by the Commission.
- (2) The name *Liburnia* Stål, 1866, a junior objective synonym of *Embolophora* Stål, 1853 is hereby placed on the Official Index of Rejected and Invalid Generic Names in Zoology.

History of Case 3460

An application to fix the type species of the genus *Liburnia* Stål, 1866 as *Embolophora monoceros* Stål, 1855 for a genus of delphacid planthopper to make *Liburnia* Stål, 1866 a junior objective synonym of *Embolophora* Stål, 1853 was received from C.R. Bartlett (*University of Delaware, Newark, DE, U.S.A.*) on 4 April 2008. After correspondence the case was published in BZN 65: 183–187 (September 2008). The title, abstract and keywords of the case were published on the Commission's website. No comments on this case were received.

Decision of the Commission

On 1 September 2009 the members of the Commission were invited to vote on the proposals published in BZN 65(3): 185. A majority of Commissioners voted FOR the Case but it failed to reach the two-thirds majority required for approval. In accordance with the Bylaws the Case was sent for a revote on 2 March 2010. At the close of the voting period on 2 June 2010 the votes were as follows:

Affirmative votes – 13: Ballerio, Bogutskaya, Bouchet, Fautin, Harvey, Krell, Kullander, Ng, Pape, Papp, Patterson, Winston and Yanega.

Negative votes – 13: Alonso-Zarazaga, Brothers, Grygier, Halliday, Kojima, Kottelat, Lamas, Lim, Minelli, Rosenberg, Štys, van Tol and Zhou.

Pyle and Zhang were on leave of absence.

Alonso-Zarazaga, voting AGAINST, said that strict application of the Code makes *Liburnia* Stål, 1866 an unnecessary replacement name for an available name

Embolophora Stål, 1853 (mentioned as a synonym originally for the first group of species). Consequently, the type species for both is *Embolophora monoceros* Stål, 1855, so the application was not necessary. The original description places no 'subgeneric name' in the second group and the author should not interpret Stål's intentions, which were not originally written. Alonso-Zarazaga felt the Commission should place *Liburnia* with type species by monotypy on the Official Index of Rejected and Invalid Names in Zoology, as a junior objective synonym of *Embolophora*. There is no need for the use of the plenary power in this case. Halliday, voting AGAINST, said that he changed his vote in the second round as he accepted the argument that Commission action was not required, since *Liburnia* is a junior objective synonym of *Embolophora*. Automatic application of the Code is enough to solve this problem. Kojima, voting AGAINST, said it was clear that Stål's (1866) division was not proposing subgenera and that *Liburnia* was proposed as an objective synonym of *Embolophora*, regardless of what Stål intended. The issue could be solved without asking for plenary ruling by the ICZN. Stys, voting AGAINST, also felt that no action by the Commission was needed, as the situation is fully covered by the Code.

Harvey commented that although this application seemed somewhat unnecessary and could be resolved by strict application of the Code, he voted FOR to resolve the situation.

Original reference

The following is the original reference to the name placed on Official Index by the ruling given in the present Opinion:

Liburnia, Stål, 1866, *Officina Norstedtiana*, Stockholm, Sweden, p. 179.

OPINION 2261 (Case 3450)

***Chrysophanus florus* Edwards 1884 (currently *Lycaena florus*) (Insecta, Lepidoptera, LYCAENIDAE): specific name conserved by designation of a neotype for *Polyommatus castro* Reakirt, 1866 (currently *Lycaena castro*)**

Abstract. The Commission has ruled that the specific name *Chrysophanus florus* Edwards 1884 (currently *Lycaena florus*) (Insecta, Lepidoptera, LYCAENIDAE) for a butterfly species from North America is conserved by designation of a male of *Lycaena helloides* (Boisduval, 1852) as neotype for *Polyommatus castro* Reakirt, 1866 (currently *Lycaena castro*).

Keywords. Nomenclature; taxonomy; Insecta; Lepidoptera; LYCAENIDAE; *Lycaena*; *Lycaena castro*; *Lycaena florus*; *Lycaena helloides*; *Lycaena dorcas*; coppers; Rocky Mountains.

Ruling

- (1) Under the plenary power it is hereby ruled that all previous type fixations for *castro* Reakirt 1866, as published in the binomen *Polyommatus castro*, are set aside and the male specimen identified as *Polyommatus helloides* Boisduval, 1852 from Lakewood, Jefferson Co., Colorado, is hereby designated as the neotype.
- (2) The name *helloides* Boisduval, 1852, as published in the binomen *Polyommatus helloides* is hereby placed on the Official List of Specific Names in Zoology.

History of Case 3450

An application to conserve the widely used name *Chrysophanus florus* Edwards, 1884 (currently *Lycaena florus*) for a butterfly species from North America by designating a neotype for *Polyommatus castro* Reakirt, 1866 was received from James A. Scott (Lakewood, CO, U.S.A.) on 10 January 2008. After correspondence the case was published in BZN 66: 136–143 (June 2009). The title, abstract and keywords of the case were published on the Commission's website. Two comments in support of this case were published in 66: 273 (September 2009) and 66: 352 (December 2008).

Decision of the Commission

On 1 June 2010 the members of the Commission were invited to vote on the proposals published in BZN 66: 140–141 (June 2009). At the close of the voting period on 1 September 2010 the votes were as follows

Affirmative votes – 20: Ballerio, Bogutskaya, Bouchet, Brothers, Fautin, Grygier, Halliday, Harvey, Krell, Lamas, Minelli, Ng, Pape, Papp, Rosenberg, van Tol, Winston, Yanega, Zhang and Zhou.

Negative votes – 4: Kojima, Kullander, Lim and Štys.

Alonso-Zarazaga, Kottelat, Patterson and Pyle were on leave of absence.

Kojima, voting AGAINST, said he could not understand the exact purpose of this proposal which seemed to ask that the Commission use its plenary power to designate the specimen that the author collected as the neotype of *Polyommatus castro* Reakirt, 1866 in order to make the author's taxonomic decision reflected in the nomenclature of the butterflies concerned. Štys, voting AGAINST, said that nomenclatural decisions should not be used to resolve an apparently incompletely understood taxonomy.

Lamas voting FOR, suggested that Proposal (2) in paragraph 15 should be modified by deletion of the last half of the sentence, beginning with '... and as defined by ...'. *Polyommatus helloides* is certainly not 'defined by the neotype ... for *Polyommatus castro* ...' as claimed. The application of the name *P. helloides* is defined by reference to its name-bearing type, the male lectotype validly designated by Emmel et al. (1998). (Secretariat's note – this suggested change has been implemented).

Original references

The following is the original reference to the name placed on Official Lists by the ruling given in the present Opinion:

helloides, *Polyommatus*, Boisduval, 1852, *Annales de la Société Entomologique de France*, (2)**10**: 291.

OPINION 2262 (Case 3468)***Clusiodes* Coquillett, 1904 (Insecta Diptera, CLUSIIDAE): usage conserved by designation of *Heteroneura albimana* Meigen, 1830 as the type species**

Abstract. The Commission has ruled that the current usage of the name *Clusiodes* Coquillett, 1904 (replacement name for *Heteroneura* Fallén, 1823) is conserved for a widespread clusiid genus by setting aside all previous type fixations and by designating *H. albimana* Meigen, 1830 as the type species.

Keywords. Nomenclature; taxonomy; type species; CLUSIIDAE; *Heteroneura*; *Clusiodes*; druid flies; worldwide distribution.

Ruling

- (1) Under the plenary power it is hereby ruled that all previous type fixations for *Heteroneura* Fallén, 1823 are set aside and *Heteroneura albimana* Meigen, 1830 is hereby designated as the type species.
- (2) The name *Clusiodes* Coquillett, 1904 (gender: masculine), type species *Heteroneura albimana* Meigen, 1830, as ruled in (1) above, is hereby placed on the Official List of Generic Names in Zoology.
- (3) The name *albimana* Meigen, 1830, as published in the binomen *Heteroneura albimana* (specific name of the type species of *Heteroneura* Fallén, 1823, and subsequently *Clusiodes* Coquillett, 1904) is hereby placed on the Official List of Specific Names in Zoology.

History of Case 3468

An application to conserve usage of the generic name *Clusiodes* Coquillett, 1904 (replacement name for *Heteroneura* Fallén, 1823) for a widespread clusiid genus by designating *H. albimana* Meigen, 1830 as the type species was received from Owen Lonsdale (*Smithsonian Institution, National Museum of Natural History, Washington, D.C., U.S.A.*) on 7 July 2008. After correspondence the case was published in BZN 66: 144–146 (June 2009). The title, abstract and keywords of the case were published on the Commission's website. No comments on this case were received.

Decision of the Commission

On 1 June 2010 the members of the Commission were invited to vote on the proposals published in BZN 66: 145. At the close of the voting period on 1 September 2010 the votes were as follows:

Affirmative votes – 16: Bouchet, Brothers, Fautin, Halliday, Harvey, Kojima, Krell, Lamas, Lim, Papp, Rosenberg, Štys, van Tol, Winston, Zhang and Zhou.

Negative votes – 8: Ballerio, Bogutskaya, Grygier, Kullander, Minelli, Ng, Pape and Yanega.

Alonso-Zarazaga, Kottelat, Patterson and Pyle were on leave of absence.

Voting FOR, Rosenberg commented that the petition does not mention that *Clusiodes* is also the basis of the subfamily CLUSIODINAE, which is another reason to retain the name.

Voting AGAINST, Grygier said that the application is missing a statement to the effect that *Clusiodes* has no available junior synonym(s). He said he cannot judge the worth of salvaging *Clusiodes* in its current sense without knowing what the alternative is under the Code, or even whether there is an alternative. He would also like to know exactly how Zetterstedt's (1838) type designation was worded, to be sure *muscaria*, and not *geomyzina* designated ten years later, is the actual type species of *Heteroneura* and *Clusiodes*. Finally, *Heteroneura albimana* was not an originally included species, and it would take stronger arguments than are presented here to convince him to confirm it as the new type species. Also voting AGAINST, Ng expressed a similar need for more explanation in the case. He said he did not understand clearly why the proponent did not select one of the original three species named, specifically *H. geomyzina*, if the current family classification is to be maintained. He did not see why a species described later was chosen. In addition, Ng said there is no indication of whether *Clusioides* has any junior synonyms that may have also been used in the last few decades. He said that if it were clear that without a Commission decision a new name would need to be established, he would have been more inclined to vote FOR. Yanega, voting AGAINST, also mentioned that no justification was given for the selection of a type species which was not an originally-included species; it appears that *geomyzina* is the only appropriate choice for type species, and there is no demonstration that *geomyzina* is somehow unsuitable.

Original references

The following are the original references to the names placed on Official Lists by the ruling given in the present Opinion:

albimana, *Heteroneura*, Meigen, 1830, *Systematische Beschreibung der bekannten europäischen zweiflügeligen Insekten*, Sechster Theil. IV, Schulz, Hamm, p. 128.

Clusiodes Coquillett, 1904, *Proceedings of the Entomological Society of Washington*, 6: 93.

OPINION 2263 (Case 3466)***Pachyramphus* G.R. Gray in Gould, 1839 (July) (Aves, Passeriformes, COTINGIDAE): generic name conserved**

Abstract. The Commission has conserved the name *Pachyramphus* G.R. Gray in Gould, 1839 (July) (COTINGIDAE) in its accustomed usage for a genus of cotinga from Central and South America. The name *Pachyramphus* Gould, 1839 (January) and all its uses before July 1839 have been suppressed.

Keywords. Nomenclature; taxonomy; Aves; Passeriformes; COTINGIDAE; TYRANNIDAE; *Pachyramphus*; *Psaris cuvierii*; *Pachyramphus viridis*; Central America; South America; cotingas; becards.

Ruling

- (1) Under the plenary power the name *Pachyramphus* Gould, 1839a (January) and all its uses before Gray in Gould, 1839b (July) are hereby suppressed for the purposes of both the Principle of Priority and the Principle of Homonymy.
- (2) The name *Pachyramphus* G.R. Gray in Gould, 1839 (July) (gender: masculine), type species by subsequent designation by G.R. Gray (1840) *Psaris cuvierii* Swainson, 1821, a junior synonym of *Tityra viridis* Vieillot, 1816, is hereby placed on the Official List of Generic Names in Zoology.
- (3) The name *viridis* Vieillot, 1816, as published in the binomen *Tityra viridis* (senior subjective synonym of *Psaris cuvierii* Swainson, 1821, specific name of the type species of *Pachyramphus* G.R. Gray, 1839 (July)) is hereby placed on the Official List of Specific Names in Zoology.
- (4) The name *Pachyramphus* Gould, 1839 (January), as suppressed in (1) above, is hereby placed on the Official Index of Rejected and Invalid Generic Names in Zoology.

History of Case 3466

An application to conserve the usage of the generic name *Pachyramphus* G.R. Gray in Gould, 1839 (July) (family COTINGIDAE) for a genus of cotinga from Central and South America, by suppressing the name *Pachyramphus* Gould, 1839 (January), was received from S.M.S. Gregory (Northampton, U.K.) on 13 May 2008. After correspondence the case was published in BZN 65: 300–303 (December 2008). The title, abstract and keywords of the case were published on the Commission's website. No comments were received on this case.

Decision of the Commission

On 1 December 2009 the members of the Commission were invited to vote on the proposals published in BZN 65: 301–302. At the close of the voting period on 1 March 2010 the votes were as follows:

Affirmative votes – 26: Alonso-Zarazaga, Ballerio, Bogutskaya, Bouchet, Brothers, Fautin, Grygier, Halliday, Harvey, Kojima, Kottelat, Krell, Kullander, Lamas, Lim, Minelli, Ng, Patterson, Pape, Papp, Rosenberg, Štys, van Tol, Winston, Yanega and Zhang.

Negative votes – none.

Zhou ABSTAINED. Pyle was on leave of absence.

Original references

The following are the original references to the names placed on Official Lists and Indexes by the ruling given in the present Opinion:

Pachyramphus Gould, 1839a, Birds. In: *The zoology of the voyage of H.M.S. Beagle, under the command of Capt. Fitzroy, R.N., during the years 1832 to 1836*, Darwin, C. (Ed.), part 6 [Part 3(2)]. Smith, Elder & Co., London, pls. XIV and XV.

Pachyramphus G.R. Gray, 1839b, Birds. In: *The zoology of the voyage of H.M.S. Beagle, under the command of Capt. Fitzroy, R.N., during the years 1832 to 1836*, Darwin, C. (Ed.), part 9 [Part 3(3)]. Smith, Elder & Co., London, p. 50.

viridis, *Tityra*, Vieillot, 1816, Becardé, *Nouveau dictionnaire d'histoire naturelle, appliqué*, vol. 3, ASI-BOE. 560 pp. Deterville, Paris, p. 348.

OPINION 2264 (Case 3431)***Procynosuchus* Broom, 1937 (Therapsida, Cynodontia): generic name conserved**

Abstract. The Commission has ruled that the generic name *Procynosuchus* Broom, 1937 for a group of Permian cynodonts (family PROCYNOSUCHIDAE) has precedence over the older names *Cyrbasiodon* Broom, 1931 and *Parathrinaxodon* Parrington, 1936 whenever these genera are considered to be synonyms.

Keywords. Nomenclature; taxonomy; Therapsida; Cynodontia; PROCYNOSUCHIDAE; *Procynosuchus*; *Cyrbasiodon*; *Parathrinaxodon*; *Procynosuchus delaharpeae*; *Cyrbasiodon boycei*; *Parathrinaxodon proops*; Permian; Africa; Germany; Russia.

Ruling

- (1) Under the plenary power it is hereby ruled that precedence is given to the following names:
 - (a) *Procynosuchus* Broom, 1937 over the names *Cyrbasiodon* Broom, 1931 and *Parathrinaxodon* Parrington, 1936 whenever it and either of the other two are considered to be synonyms;
 - (b) *delaharpeae* Broom, 1937, as published in the binomen *Procynosuchus delaharpeae* (specific name of the type species of *Procynosuchus* Broom, 1937), over the names *boycei* Broom, 1931, as published in the binomen *Cyrbasiodon boycei* (specific name of the type species of *Cyrbasiodon* Broom, 1931), and *proops* Parrington, 1936, as published in the binomen *Parathrinaxodon proops* (specific name of the type species of *Parathrinaxodon* Parrington, 1936), whenever it and either of the other two are considered to be synonyms.
- (2) The following names are hereby placed on the Official List of Generic Names in Zoology:
 - (a) *Procynosuchus* Broom, 1937 (gender: masculine), type species by monotypy *Procynosuchus delaharpeae* Broom, 1937, with the endorsement that it is to be given precedence over the names *Cyrbasiodon* Broom, 1931 and *Parathrinaxodon* Parrington, 1936 whenever it and either of the other two are considered to be synonyms;
 - (b) *Cyrbasiodon* Broom, 1931 (gender: masculine), type species by monotypy *Cyrbasiodon boycei* Broom, 1931, with the endorsement that it is not to be given priority over the name *Procynosuchus* Broom, 1937 whenever the two are considered to be synonyms;
 - (c) *Parathrinaxodon* Parrington, 1936 (gender: masculine), type species by monotypy *Parathrinaxodon proops* Parrington, 1936, with the endorsement that it is not to be given priority over the name *Procynosuchus* Broom, 1937 whenever the two are considered to be synonyms.
- (3) The following names are hereby placed on the Official List of Specific Names in Zoology:

- (a) *delaharpeae* Broom, 1937, as published in the binomen *Procynosuchus delaharpeae* (specific name of the type species of *Procynosuchus* Broom, 1937), with the endorsement that it is to be given precedence over the names *Cyrbasiodon boycei* Broom, 1931 and *Parathrinaxodon proops* Parrington, 1936 whenever it and either of the other two are considered to be synonyms;
- (b) *boycei* Broom, 1931, as published in the binomen *Cyrbasiodon boycei* (specific name of the type species of *Cyrbasiodon* Broom, 1931), with the endorsement that it is not to be given priority over the name *Procynosuchus delaharpeae* Broom, 1937 whenever the two are considered to be synonyms;
- (c) *proops* Parrington, 1936, as published in the binomen *Parathrinaxodon proops* (specific name of the type species of *Parathrinaxodon* Parrington, 1936), with the endorsement that it is not to be given priority over the name *Procynosuchus delaharpeae* Broom, 1937 whenever the two are considered to be synonyms.

History of Case 3431

An application to conserve the generic name *Procynosuchus* Broom, 1937 for a group of Permian cynodonts (family PROCYNOSUCHIDAE) by giving it precedence over the older names *Cyrbasiodon* Broom, 1931 and *Parathrinaxodon* Parrington, 1936 whenever these genera are considered synonymous, was received from Christian F. Kammerer (*University of Chicago, Chicago, IL, U.S.A.*) and Fernando Abdala (*University of the Witwatersrand, Johannesburg, South Africa*) on 10 July 2007. After correspondence the case was published in BZN 66: 64–69 (March 2009). The title, abstract and keywords of the case were published on the Commission's website. Three supportive comments on this case were published in BZN 66: 188 (June 2009) and 67: 95 (March 2010).

Decision of the Commission

On 1 June 2010 the members of the Commission were invited to vote on the proposals published in BZN 66: 67 (March 2009). At the close of the voting period on 1 September 2010 the votes were as follows

Affirmative votes – 20: Ballerio, Bouchet, Brothers, Fautin, Grygier, Halliday, Harvey, Krell, Lamas, Minelli, Ng, Pape, Papp, Rosenberg, Štys, van Tol, Winston, Yanega, Zhang and Zhou.

Negative votes – 4: Bogutskaya, Kojima, Kullander and Lim.

Alonso-Zarazaga, Kottelat, Patterson and Pyle were on leave of absence.

Original references

The following are the original references to the names placed on Official Lists by the ruling given in the present Opinion:

boycei, *Cyrbasiodon*, Broom, 1931, *Records of the Albany Museum*, 4: 163.

Cyrbasiodon Broom, 1931, *Records of the Albany Museum*, 4: 163.

delaharpeae, *Procynosuchus*, Broom, 1937, *Proceedings of the Zoological Society of London*, Series B, 107: 314.

Parathrinaxodon Parrington, 1936, *Philosophical Transactions of the Royal Society of London*, Series B, 230: 132.

Procynosuchus Broom, 1937, *Proceedings of the Zoological Society of London*, Series B, 107: 314.

proops, *Parathrinaxodon*, Parrington, 1936, *Philosophical Transactions of the Royal Society of London*, Series B, 230: 132.

OPINION 2265 (Case 3483)***Villanyia* Kretzoi, 1956 (Mammalia, Rodentia, ARVICOLIDAE): usage conserved by designation of a neotype for the type species *Villanyia exilis* Kretzoi, 1956**

Abstract. All type fixations for a species of extinct vole *Villanyia exilis* Kretzoi, 1956 prior to that by Terzea (1991) have been set aside in order to conserve prevailing usage.

Keywords. Nomenclature; taxonomy; Mammalia; Rodentia; ARVICOLIDAE; *Villanyia*; *Villanyia exilis*; Europe; Pleistocene; Pliocene; voles; biostratigraphy.

Ruling

- (1) Under the plenary power it is hereby ruled that all previous type fixations for *Villanyia exilis* Kretzoi, 1956 are set aside and the specimen GIH V-12702 VT95#2, Museum of the Hungarian Geological Survey (MAFI), Budapest is hereby designated as the neotype.
- (2) The name *Villanyia* Kretzoi, 1956 (gender: feminine), type species by monotypy *Villanyia exilis* Kretzoi, 1956, is hereby placed on the Official List of Generic Names in Zoology.
- (3) The name *exilis* Kretzoi, 1956, as published in the binomen *Villanyia exilis* (specific name of the type species of *Villanyia* Kretzoi, 1956), as defined by the neotype designated in (1) above, is hereby placed on the Official List of Specific Names in Zoology.
- (4) The name *ultima* Rabeder, 1981, as published in the binomen *Cseria ultima* (a junior objective synonym of *Villanyia exilis* Kretzoi, 1956, as defined by the neotype designated in (1) above), is hereby placed on the Official Index of Rejected and Invalid Specific Names in Zoology.

History of Case 3483

An application to set aside all type fixations for a species of extinct vole *Villanyia exilis* Kretzoi, 1956 prior to that by Terzea (1991) in order to conserve prevailing usage was received from D.F. Mayhew (*Nationaal Natuurhistorisch Museum Naturalis, Leiden, The Netherlands*) on 26 November 2008. After correspondence the case was published in BZN 66: 159–163 (June 2009). The title, abstract and keywords of the case were published on the Commission's website. No comments on this case were received.

Decision of the Commission

On 1 June 2010 the members of the Commission were invited to vote on the proposals published in BZN 66: 162 (June 2009). At the close of the voting period on 1 September 2010 the votes were as follows:

Affirmative votes – 23: Ballerio, Bogutskaya, Bouchet, Brothers, Fautin, Grygier, Halliday, Harvey, Krell, Kullander, Lamas, Lim, Minelli, Ng, Pape, Papp, Rosenberg, Štys, van Tol, Winston, Yanega, Zhang and Zhou.

Negative votes – 0.

Kojima ABSTAINED. Alonso-Zarazaga, Kottelat, Patterson and Pyle were on leave of absence.

Kojima, who ABSTAINED, commented that he felt the proposals to conserve usage of *Villanyia* should be approved. However, he felt that this would have been better done by setting aside the previous lectotype (and paralectotype) designations and by designating the specimen GIH V-12702 VT95#2 as the lectotype, rather than by setting aside all previous type fixations for *Villanyia exilis* Kretzoi, 1956 (including original ‘designation’ of syntypes).

Original references

The following are the original references to the names placed on Official Lists by the ruling given in the present Opinion:

- exilis*, *Villanyia*, Kretzoi, 1956, *Geologica Hungarica, series Paleontologica*, **27**: 188.
ultima, *Cseria*, Rabeder, 1981, *Beiträge zur Paläontologie von Österreich*, **8**: 63–64.
Villanyia Kretzoi, 1956, *Geologica Hungarica, series Paleontologica*, **27**: 188.

Notice of closure of Cases

The following Cases for which receipts as new applications to the Commission were published though the cases were never published in full, are now closed.

Scarrittia canquelensis Simpson, 1934 (LEONTINIIDAE, Notoungulata, Mammalia): proposed neotype for the species. A.M. Ribeiro, R.H. Madden, J. Ferigol (Case 3333; acknowledgement of receipt published in BZN 62: 1).

Thecla dumetorum Boisduval, 1852 (Insecta, Lepidoptera): proposed suppression. J.A. Scott (Case 3453; acknowledged of receipt published in BZN 65: 81). The application was resubmitted as Case 3524 and published in BZN 67: 225–237.

Desmognathus quadramaculatus Holbrook, 1840 (Amphibia, Caudata, PLETHODONTIDAE): proposed conservation of usage of the specific name by the designation of a neotype. J.A. Wooten & L.J. Rissler (Case 3427; acknowledgement of receipt published in BZN 64: 138).

Mastigamoeba aspera Schulze, 1875 (Protista, Pelobiontida): proposed conservation. G. Walker & D. Patterson (Case 3361; acknowledgement of receipt published in BZN 62: 186).

The published Case *Phreatamoeba balamuthi* Chàvez, Balamuth & Gong, 1986 (currently *Mastigamoeba balamuthi*; Protista, Pelobiontida): proposed conservation of the specific name. G. Walker (Case 3362, acknowledgement of receipt published in BZN 62: 186; Case published in BZN 64: 213–217). In a comment on the case published in BZN 67: 163–166, Commissioners F.T. Krell and D. Patterson suggested that the stability would be best achieved by allowing the Principle of Priority to stand. The case is now closed.

INTERNATIONAL TRUST FOR ZOOLOGICAL NOMENCLATURE

Financial Report for the year 2009

The main work of the Commission during the year was on applications from zoologists in 24 countries to resolve problems of zoological nomenclature. These were published in the *Bulletin of Zoological Nomenclature*, together with Opinions (rulings) made by the Commission on other cases. Further applications were under consideration. Advice was given by the Commission's Secretariat in response to a large number of enquiries on matters of nomenclature from zoologists worldwide.

Total income received by the Trust consisted of £37,518 for all publications produced by the Commission, £28,358 from appeal and general donations, £4,666 in bank interest and investment income, and £15,958 capital gain on the sale of investments, bringing the total income for the year to £86,500.

Expenditure in 2009 was £100,615 on salaries and fees of the Secretariat of the Commission, £417 on appeal expenditure and ZooBank travel, £7,768 for printing the *Bulletin of Zoological Nomenclature* and for the distribution of all publications, and £236 for office expenses and depreciation of office equipment, bringing the total expenditure to £109,036.

The Secretariat of the Commission was again housed in the Natural History Museum, London, whom we thank for their continuing support. The Trust wishes to express its thanks to all the donors listed below who have contributed to the continuation of its work for the international zoological and palaeontological community during the year.

Donations and grants were received from:

Canadian Society of Zoologists

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E. O. Wilson

Ichthyological Society of Japan

Internationaler Entomologischer Verein

Japanese Society of Systematic Zoology

Malacological Society of London

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INTERNATIONAL TRUST FOR ZOOLOGICAL NOMENCLATURE
INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR ENDED
31 DECEMBER 2009

Income**SALE OF PUBLICATIONS**

Bulletin of Zoological Nomenclature	£36,939
International Code of Zoological Nomenclature	302
Official Lists and Indexes	262
Centenary History	15

37,518

GRANTS AND DONATIONS

28,358

INTEREST RECEIVED

11

INVESTMENT INCOME

4,655

CAPITAL GAIN ON SALE OF INVESTMENTS

15,958

86,500

Expenditure**SALARIES, NATIONAL INSURANCE AND FEES**

100,615

OFFICE EXPENSES

236

**PRINTING OF BULLETIN AND DISTRIBUTION OF
PUBLICATIONS**

7,768

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PUBLICATION DATES AND PAGINATION OF VOLUME 67 (2010)

<i>Part No.</i>	<i>Pages in Part</i>	<i>Date of publication</i>
1	1–118	31 March 2010
2	119–196	30 June 2010
3	197–268	30 September 2010
4	269–366	20 December 2010

INSTRUCTIONS TO BINDER

The present volume should be bound up as follows:
Title page, Table of Contents (I–VI), 1–366

Note: the covers of the four parts should be bound with the volume

The Bulletin of Zoological Nomenclature

*ICZN The Official Periodical
of the International Commission
on Zoological Nomenclature*

Volume 67, 2010

Published on behalf of the Commission by
The International Trust for Zoological Nomenclature
c/o The Natural History Museum
Cromwell Road
London, SW7 5BD, U.K.

ISSN 0007-5167

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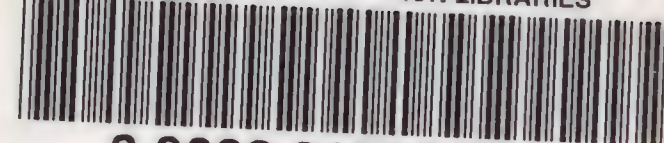
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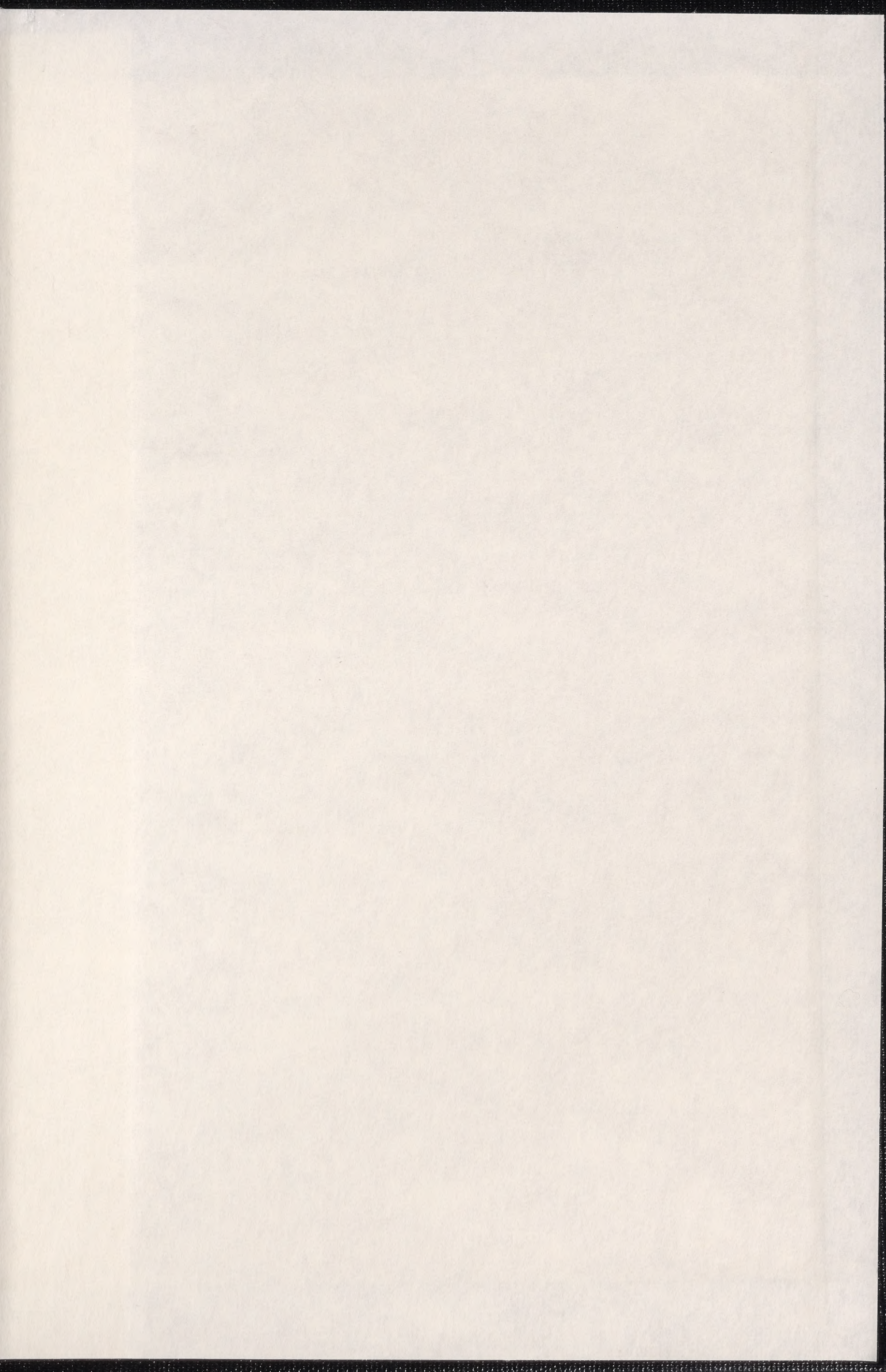
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